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HALF-YEARLY ABSTRACT
OF THE
MEDICAL SCIENCES.

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THE

HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES:

BEING

A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL
BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED
IN THE PRECEDING SIX MONTHS :

TOGETHER WITH A

SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND
THE COLLATERAL SCIENCES DURING THE SAME PERIOD.

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Dublin Hospital Gazette.
Edinburgh Medical Journal.
Edinburgh New Philosophical Journal.
Glasgow Medical Journal.
Indian Annals of Medical Science.
Journal of Psychological Medicine.
Lancet.
Liverpool Med.-Chirurgical Journal.
London Medical Examiner.
Madras Quarterly Journal of the Medical Sciences.
Medical Circular.
Medical Times and Gazette.
Microscopical Journal.
Pharmaceutical Journal.
Statistical Journal.

AMERICAN.

American Journal of Medical Sciences.
American Monthly Journal.
Canada Medical Journal.
Charleston Medical Journal and Review.
Montreal Monthly Journals.
New York Journal of Medicine.
North American Medico-Chirurgical Review.
North-Western Medical Journal.
Philadelphia Medical Examiner.

FRENCH.

Annales de Chimie et de Physique.
" *d'Hygiène Publique.*
" *Medico-Psychologique.*
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Archives Générales de Médecine.
Bulletin de l'Académie de Médecine
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Gazette des Hôpitaux.
Gazette Hebdomadaire de Médecin et de Chirurgie.
Gazette Médicale de Paris.
Journal de Pharmacie et de Chimie.
L'Union Médicale.

GERMAN.

Annalen der Chemie und Pharmacie.
Archiv für Physiolog. und Patholog.
Chemie und Mikroskopie.
Canstatt's Jahresbericht.
Deutsche Klinik.
Monatsbericht der Akademie zu Berlin.
Müller's Archiv für Anatomie, &c.
Schmidt's Jahrbücher.
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HALF-YEARLY ABSTRACT
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PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

(A) CONCERNING HYGIENE.

ART. 1.—*On the Unfavourable Influence of Sudden Change of Climate.*

By J. HENRY BENNET, M.D.

(*Lancet*, September 6, 1863.)

THE attention of the profession has not yet been drawn to the unfavourable influence exercised upon health by the sudden change from a northern to a southern, or from a southern to a northern climate, so constantly experienced in these railroad days. And yet this influence exists, even for the strong and well, and is still more decided in the case of invalids. It ought, therefore, to be recognised and taken into consideration by those who send patients abroad, in order that they may instil caution into their minds, and point out the mode in which any bad effects from the change of climate may be avoided. Dr. Bennet says:—

“ During the last few years I have four times left England in October, arriving within a week or ten days in the south of Europe, at Mentone; and four times I have left Mentone in May, and arrived soon afterwards in England. At Mentone I am at once called upon to take charge of a number of fellow-countrymen, winter emigrants like myself. On my return to London I see many of them as they arrive or pass through, or hear of them if they, as often occurs, pass to other allegiance. The autumn and spring illnesses from which they often suffer did not at first strike me as presenting anything peculiar; but gradually, as experience has increased, I have become aware, first, that these morbid accidents

present themselves each year with stereotyped regularity; and, secondly, that they are, in a great measure, referable to the *sudden* change of climate rendered possible by rapid railway communication, of which advantage is taken owing to the very natural desire to get over the journey as quickly as possible.

"The most marked peculiarity of our climate, as distinguished from that of the continent of Europe, and especially from that of the Mediterranean basin, is the great quantity of vapour which our atmosphere contains. According to Admiral Smyth, the atmosphere of England contains habitually double that of the Mediterranean region. His data are substantiated by a series of observations which I made last winter with the wet and dry bulb thermometers at Mentone. I found the difference between the two was nearly always throughout the winter very great, generally varying from five to ten degrees Fahrenheit. We have the proof also of this fact in our white-blue cloudy sky, and in our mitigated summer heat. The watery vapour screens the earth from the sun, and absorbs its heat; and hence, in part, our mild summers. The absence, or the sooner diminished amount, of this watery vapour in the atmosphere of the Mediterranean region gives a dryness, a clearness, an elasticity to the air which is very peculiar. It enables the light and heat of the sun more easily to reach the earth, and accounts for the clear deep blue of the sky and for the scorching heat of the sun's rays even in midwinter. As a necessary corollary, the nights are clear, brilliantly illuminated by stars and moon, and cold by comparison with the day.

"Professor Tyndall, in his lecture on 'Heat considered as a mode of Action,' recently delivered at the Royal Institution, has shown more clearly than any of his predecessors how great is the heat-absorbing power of aqueous vapour, and its consequent influence upon climate. The heat-absorbing power of moist air varies with its density. It is as high as ninety-eight when the barometer is at thirty inches, and but sixteen when the barometrical pressure is only five inches. Thus the nearer the aqueous vapour is to the earth, where the barometrical pressure is the greatest, the greater its heat-absorbing power, and the greater the protection it affords from the scorching effect of the sun's rays during the day, or from extreme radiation of heat during the night. Professor Tyndall applies these facts by stating that the removal for a single summer night of the aqueous vapour from the atmosphere of England would be attended by the destruction of every plant which a freezing temperature could kill. On the other hand, the day would be as scorching as the night would be cold.

"These facts give us the key to the Mediterranean climate—to its hot sunshine during the day in winter, and to its cool nights. The diminution of aqueous vapour in the atmosphere, on the one hand allows the sun's rays to reach the earth during the day; and, on the other, allows the earth's heat to radiate rapidly into space at night.

"In October, invalids leave England's moist atmosphere when the weather is already getting cold, and the evenings and mornings

are foggy. The express train is often taken at Paris for Marseilles, and in sixteen or twenty hours the dry sunshiny Mediterranean region is reached. There it is still summer; the sun is powerful; the temperature high, usually above 70° Fahr. The liver and skin, which were already in England relieved from the stimulus of our mild summer heat, are called violently and suddenly into action. The result is diarrhoea, bilious attacks more or less severe, skin irritation, urticaria, boils, &c. Diarrhoea is so common that few northerners escape; and it is universally, but erroneously I believe, attributed to change of food, to wine, and to such influences.

"These attacks are most severe with those who hurry their departure from England, push rapidly to their destination, and reach the south in September or early in October. In my opinion the last week of October is quite early enough for invalids, or even healthy northerners, to arrive in the south of Europe. The cool weather of autumn does not begin until about the second week in November; and a month or six weeks of hot, oppressive southern weather, with a liberal allowance of mosquitoes, is generally damaging to the health of 'north country people.' The worst cases of bilious derangement that I have to attend each autumn are amongst such.

"By the end of April, or the early days of May, the sheltered Riviera undercliff begins to be disagreeably warm. Moreover, fine midsummer weather has been enjoyed so long that it becomes difficult to believe that winter still reigns in the north. The invalids are tired, also, of their six months' absence from home, and their hearts are set on the return. Once the homeward journey has commenced it is generally rapidly carried on, and many arrive in Paris or in England early in May, much too soon for their own good. In the north of Europe, if the wind is from the south, in April and May the air is mild and balmy, and vegetation makes rapid strides; but until the mountain lands of Norway and Sweden are freed, or partly so, from their canopy of snow, which does not take place until June, a north-east wind brings cold, chilly weather, and night frosts. It is this cold, chilly atmosphere, an atmosphere, too, more or less loaded with moisture, that often meets the invalid on his return home. The skin and liver, previously in full operation, are checked suddenly if the journey has been a rapid one; extra work is thrown on the lungs and kidneys; and very often severe attacks of influenza, of coryza, of bronchitis, of haemoptysis, are the result.

"I have pointed out the evil; I must now point out the remedy. It is to ignore the facilities afforded by express trains and to make both the southern and the northern journeys in such a manner as to become acclimatized to the great changes.

"Serious invalids who intend to winter in the south of Europe, are better out of England the last week in September, or early in October; but, as we have seen, their winter residence is scarcely fit for them before the end of October. The two, three, or four intervening weeks should be spent on the road. A quiet, leisurely progress southward allows the human economy to gradually accustom itself to the change of climate. A favourite station with me is

Fontainbleau, thirty miles south of Paris. The climate is continental, drier than that of England, the hotels are good, and the forest scenery is very interesting and beautiful. A week or ten days may be spent there both pleasantly and profitably for health, much more so than in Paris,

"Further south we have Valence, Aix, Nimes, Arles, &c. I would, however, more especially recommend a small watering-place which I may nearly lay claim to have discovered, as far as my countrymen are concerned. It is Gréoult, a five hours' picturesque drive from Aix-en-Provence. Gréoult is merely a village, with a large comfortable hotel, in its own grounds, erected over a hot sulphur spring, one of the most powerful and longest known thermal waters of the south of France. Its celebrity, however, is all but entirely confined to that part of France. I myself found it out by the map, whilst trying to discover an autumn and spring intermediary station. I visited it last May, and was much pleased with the scenery from Aix, with the hotel and its grounds, and with the very lovely district in which it is situated. There are two wild mountain rivers—the Durance and one of its tributaries—within a mile of the house, and fishing and shooting are provided for the inmates, with all the resources of French social country life. The hotel makes up some 200 beds. Gréoult is quite out of the beaten track, far away from railways, amongst the hills of Provence, and a residence there must have many charms. I sent a little colony of my Mentone friends and patients there this spring, and they were all delighted with it. There is an intelligent resident French physician, Dr. Jaubert. I do not think a pleasanter place could be found to spend a fortnight in on the way south.

"The same course can be followed by invalids on their return north. The departure from Mentone, Nice, Cannes, or from Italy or Spain, can take place at the end of April, or on the first day of May; and a leisurely journey may be made towards the north, so as to reach England by the end of May or the first day of June. Gréoult is open on the 1st of May, and is even thus early very lovely; the deciduous trees in full leaf, and the nightingale in full song. A fortnight at Gréoult, a week at Fontainbleau, and May is pleasantly consumed, and England and its climate reached by slow stages, which neutralize the risks attendant upon the 'cannon-ball' style of travelling."

ART. 2.—*How People may Live and not Die in India.*

By Miss NIGHTINGALE.

(*British Medical Journal*, October 22, 1863.)

The paper of which we subjoin the abstract was read by Dr. Scoresby Jackson, at a meeting of the National Association for the Promotion of Social Science, recently held at Edinburgh.

Miss Nightingale commences by stating that her paper dealt with one of the most important social questions of the day, viz., how the British race was to hold possession of India, and to bestow upon its

vast population the benefit of her own civilization. The Royal Commission on the sanitary state of the army in India has shown that unless the health of the British army in India could be improved, and the enormous death-rate reduced, this country would never be able to hold India with a British army. The average death-rate of the troops serving in India is no less than 69 per 1000 per annum. That death-rate, moreover, does not include those who are invalided, and who died on the voyage to England, or soon after their return ; but taking it simply as it was, and assuming the strength of the British army at 73,000, it proved that such an army would lose on an average of years an entire brigade of 5037 men per annum ; sometimes it would be half that number, but in other years it would lose two such brigades. It was said that the death-rates of the war year being the highest (not from wounds), peace, and not sanitary measures, was the remedy. As well might it be said that because the British army had nearly perished before Sebastopol not from wounds, but from want of every supply of civilised life, peace, and not the supply of the wants of civilised life, was the remedy. The Royal commission has shown that, if the death-rate were reduced to even 20 per 1000 per annum (double that of home stations since these stations had improved) to India would be saved a tax equal to 1000*l.* sterling. Referring next to the question how this great death-rate in India had arisen, Miss Nightingale is afraid the reply must be that British civilisation was insular and local, and that it took small account of how the world goes on out of its small island. The ordinary system of dieting British soldiers in India was more adapted to a cold climate than that of out-of-door farm servants doing work in England. More than this, the occasional dram at home was commuted by regulation in India into a permission to drink two drams —*i.e.*, six ounces of rum spirit every day. And, at the same time, the men had little or nothing to do. The craving for spirit induced by this regulation-habit of tippling led to increase of drunkenness ; so that, with over-eating, over-drinking, total idleness, and vice springing directly from these, the British soldier in India had small chance indeed of coping with the climate—so-called. The regulation allowance of raw spirits which a man might obtain at the canteen was no less than eighteen gallons and a half per annum, which was, Miss Nightingale believes, three times the amount per individual which had raised Scotland, in the estimation of economists, to the rank of being the most spirit-consuming nation in Europe. Of late years malt liquor had been partly substituted for spirits. So much for intemperance ; but not to this and its kindred vice alone, or to this mainly, was to be laid the soldier's mortality in India, as had been falsely supposed. The diseases from which the soldier mainly suffered there were miasmatic. There were foul-air diseases and foul-water diseases—fevers, dysenteries, and so on. Intemperance might cause liver disease, and put the man into a state of health which prevented him from resisting miasmatic causes. There was no drainage either in town or country. There was not a single station drained. If such a state of things existed at home we should know that we have fevers, cholera, and epidemics to expect. As

regarded water, there was certainly not a single barrack in India which was supplied, in one sense of the term, at all. There were neither water-pipes nor drain-pipes. Water was to be had either from tanks into which all the filth of the neighbouring surface was washed by the rains, or from shallow wells dug in unwholesome or doubtful soil. So simple a piece of mechanism as a pump was unknown. Water was drawn in skins, carried in skins on the backs of men or bullocks, and poured into a sort of vessel in the barracks for use. The quantity of water was utterly insufficient for health; and as to the quality, the less said about that the better. The construction of barracks where men had to pass their whole period of service was another illustration of how completely home civilization was reversed in India. As soon as the soldier came to India he was put into a room with 100, or 300, and in one case, with as many as 600 men. To take another illustration. Our home British population was about the most active in the world. But as soon as the same men went to India they were shut up all day in their hot close barrack-rooms, where they also ate and slept. They were not allowed to take exercise; all their meals were eaten in the hottest part of the day, and served to them by native servants; and they lay in their beds idle, and partly sleeping, till sunset. "Unrefreshing day sleep" was, indeed, alleged as one of the causes for the soldier's ill-health. The Indian social state of the British soldier was not only the reverse of the social state of the soldier at home, and of the class from which he was taken, but there was a great exaggeration in the wrong direction, and people were surprised that British soldiers died in India—and they laid the whole blame on the climate. Miss Nightingale proceeds to refer to the results of the inquiry of the Royal Commission as showing that there was not a shadow of proof that India was created to be the grave of the British race. The evidence, on the contrary, showed that all the climate required was that men should adapt their social habits and customs to it. The recommendations made by the Royal Commission for improving the health of the British army in India amounted to this: You have in India such a climate; if you wish to keep your health in it be moderate in eating and drinking, eat very little animal food; let your diet be chiefly farinaceous and vegetable. Use beer or light wine, but sparingly; drink coffee or tea; clothe yourself lightly to suit the climate, wearing thin flannel always next the skin; take plenty of exercise, and use prudence and common sense as to the times of it. So far for personal habits. What follows pertains to government: Be particularly careful to have a plentiful supply of pure water laid on for every purpose; drain all dwellings; have no cess-pits; attend rigidly to cleansing, not only surface-cleansing; never crowd large numbers into the same room; build separate barrack-rooms instead of large barracks; place these so that the air plays freely round them; raise them above the ground, with a current of air beneath; never build in a wet hollow, nor on a sludgy river bank, which would be avoided even at home. But if we would make India about as healthy as England, only somewhat hotter, let us have improved agriculture and agricultural drainage. If all these improvements

were carried out, the normal death-rate of the British soldier would be not 60 per 1000, but 10 per 1000, say the Commissioners. Miss Nightingale then refers to the cause of the prevalence of epidemic diseases among the natives of India. The worst condition of the most neglected district at home, multiplied many times over, was, to say the least of it, the normal condition of every city and town in India. Not one city or town was drained. Domestic filth round people's houses beggared description. Water-supply was from wells or tanks in ground saturated with filth. Domestic conveniences were wanting. The air in and for some distance around native towns was as foul as sewer-air, there being no sanitary administration and no sanitary police. There was not a town which did not want water-supply, draining, paving, cleansing, healthy plans for arranging and constructing buildings, together with agricultural drainage and improved cultivation all round. These things the people could not do for themselves. But the Indian government could do them. Three health departments (one for each of the Presidencies) had been recommended by the Royal commission, together with a home commission to help those departments in bringing the appliances of home civilization in India. The work was urgent. Every day it was left undone added its quota of inefficiency to the British army, and its thousands of deaths to the native population. Danger was common to European and to native. Many of the best men this country ever had had fallen victims to the same causes of disease which have decimated the population of Hindostan. The real, the main point—the great discovery of the Royal Commission was this: Look to the state of your stations first, then look to the hills for help. The stations and cities were in a condition which, in the finest temperate climate in Europe would be—have been—the cause of half the population being swept off by disease. And, on the other hand, no climate in the world—certainly not that of India—could kill us if we did not kill ourselves by our neglect. The question was no less a one than this: How to create a Public Health Department for India—how to bring a higher civilization into India? What a work, what a noble task for an Indian Government. No “inglorious period of our dominion” that, but a most glorious one!

ART. 3.—*On Nursing upon the same Principle as that of the French Sœurs de Charité.*

By LORD BROUGHAM.

(*British Medical Journal*, October 17, 1863.)

At the recent meeting of the Social Science Association at Edinburgh, the President, Lord Brougham, in his opening address, made the following remarks on the introduction into this country of nurses trained like the French *Sœurs de Charité*:—“It was more than once urged at our last congress that the invaluable attendance in French hospitals of *Sœurs de Charité* made their establishment in

this country not only expedient, but a kind of duty. There is great satisfaction in finding that steps have been taken with much success towards the attainment of this object. The most important by far is the foundation, by the sister of our colleague, Lord Granville, Lady G. Fullerton (so well known for her excellent writings), of a sisterhood under a Paris superior, in a spacious building, for which her coadjutor, Miss Easton, has nobly contributed 5000*l*. These ladies being Roman Catholics, their sisterhood is of the same persuasion, and this somewhat interferes with their attendance in hospitals. But Miss Brownlow Byron has established another body of the same kind—the All Saints' Home, in Margaret Street—and there are no other attendants than these sisters at the University College Hospital. This is a great benefit gained; and undoubtedly the exertions of this association, and of those ladies especially who are in co-operation with us, have mainly effected it. It is plain that the duties of nurses offer a great and constant means of female employment, as our amiable and able colleague Miss Hope, and her coadjutors in this town, have shown, confirmed by the excellent training schools for nurses under Mrs. Balfour. The *Sœurs de Charité* also perform the service of nursing the sick at their dwellings. I remember that, when attending M. de Tocqueville's funeral at Cannes, the feeling most generally expressed by all present was thankfulness for the comfort which attended the last weeks of his life from the care of those excellent persons. Surely those who have introduced this sisterhood into our country are worthy of all acceptation. They well deserve to be the countrywomen of Florence Nightingale—and no higher panegyric can be pronounced."

ART. 4.—*On Iodine as a Deodorizer and Disinfectant.*

By Dr. B. W. RICHARDSON.

(*Medical Times and Gazette*, September 26, 1863.)

At one of the recent meetings of the British Association for the Advancement of Science, at Newcastle, Dr. Richardson made some short observations on this subject. He said:—"The iodine should be placed in a common chip-box, such as is employed by pharmacists, the lid of the box being replaced by a covering of "leno," or the iodine may be placed in the ornamental vases on the mantel-shelf of a room. The smell of iodine could thus be communicated to the air of an apartment, and air so purified was not only fresh and agreeable to the sense of smell, but any organic matters present in it were destroyed. In extreme cases the iodine should be placed on a dish or plate, and the heat of a candle being applied beneath, the iodine was volatilized, and a room was quickly purified. Dr. Richardson said that in cases of small-pox a knowledge of the facts he had named was most valuable. In rooms occupied by sufferers from this painful disease, organic matters floated largely in the air, rendering the air most offensive. He (Dr. Richardson) had succeeded, in all cases, in rendering such air inodorous by the volatilization of iodine. He had also observed the singular fact, that when

the air was greatly charged with organic materials, the smell of the iodine was for a long time imperceptible, so that in truth the iodine method of purification was also a ready and practical test of the purity of an air. Dr. Richardson thought the iodine plan was quite as effective as the liberation of free ozone—it was, indeed, in principle the same, and was so simple that every person could employ it."

ART. 5.—*On the Medicinal Use of Arsenicated Mineral Waters, with special reference to that of Whitbeck.*

By DR. GEORGE ROBINSON, formerly Lecturer on Practice of Medicine at the Newcastle-on-Tyne College of Medicine.

(*Lancet*, July 5, 1863.)

At the Cambridge Meeting of the British Association, Dr. John Davy gave an account of a small mountain stream in Cumberland, Whitbeck by name, which contains a minute quantity of arsenic, and which has been used by the inhabitants of an adjoining village from time immemorial, without any marked effect, bad or good, and which has proved equally inert to animals, with the exception of ducks and swans. Dr. Robinson accompanied Dr. Davy in one of his visits to this stream, and as one of the results of this visit, he is now induced to ask—whether a natural combination of arsenic, such as that occurring at Whitbeck, will not in many cases be found a more efficacious therapeutic agent than any artificial solution of arsenical compounds?

He introduces the subject by some general remarks upon the action of arsenic, and the cases in which arsenic is likely to be beneficial, and then proceeds:—"In brief, then, I submit that in these and many other diseases where the administration of arsenic is indicated, that remedy may be most safely, effectually, and pleasantly given by the internal and external use of a naturally arsenicated water.

"The greater safety would result from the excessive and constant dilution of the medicinal substance by pure water, thus preventing any irritating or injurious effect upon the system. This is distinctly proved by the fact of the daily and habitual imbibition of the Whitbeck water by the inhabitants of that village, as detailed by Dr. Davy.

"The greater efficacy of the natural over any artificial solution of arsenic must be influenced by two chief circumstances—1st, the adjuvants constituted by the pure air, delightful scenery, proximity to the sea, and the complete change of mental and bodily associations, involved in a visit to a district like that of Whitbeck; and 2nd, the peculiar state of combination in which the chief remedial substance exists in this particular water. And on this point I may be allowed to quote *verbatim*, the remarks of Dr. Davy and Mr. Church, premising that the fact of the arsenical impregnation of the Whitbeck water was determined some years back by Mr. Zenner, analytical chemist of Newcastle, and was then understood to be the

necessary effect of the existence in this mountain of large masses of arsenical pyrites (mispickel).

"Dr. Davy thus describes the water of Whitbeck:—'It had the general character of the mountain streams of the Lake District, was perfectly clear and colourless, and tasteless. Of the several specimens obtained I found the specific gravity the same, and the same as that of distilled or rain water. When evaporated to dryness the residue was very small, a pint yielding about '25 of a grain; and from the different specimens tried, not varying more than one-tenth of a grain. In each instance this residue was found to consist chiefly of common salt; it tasted of this salt, and in solution was copiously precipitated by nitrate of silver. Mixed with the common salt was a little magnesia and lime, both probably in combination with sulphuric acid, as sulphate of lime and of magnesia, the presence of the acid being denoted by nitrate of barytes; a trace, too, of oxide of arsenic was detected in each, and, it may be inferred, in combination with potash, a trace of which was also obtained. The arsenic was detected not only by the test of the ammoniacal-nitrate of silver, but also by reduction to its metallic state by sublimation after mixture with ferrocyanide of potassium. Of the several specimens of water tried, that procured in October, when the stream was about its ordinary size, afforded a somewhat stronger trace of the metal than either the earlier or the later: the one in August, 1861, taken when the stream was swollen after rain; the other in January, 1862, during a frost of several days' duration, when probably the water was frozen at its sources—the stream being then lower than common. In noticing, however, the later, I should except the last—that taken in August last, when the stream was of about its average volume, and the indications of arsenic nearly the same as those of October. In the instance that the trace was strongest, judging from comparative experiments with oxide of arsenic—experiments of reduction by sublimation—the quantity of oxide contained in the pint was only about '008 grain, or '064 grain to the gallon.'

"Mr. Church says: 'The reaction of the water as it issues from the earth was faintly but unmistakably alkaline; on testing the water after ebullition the effect was more decided. The water from many other sources in the neighbourhood of Whitbeck, where decomposing granite is of common occurrence, has an alkaline reaction. The water, on examination, gave distinct indications of the presence of arsenic. This element, which here probably exists as an alkaline arsenite, occurs, not as a mere trace, but in determinate quantity. I have satisfied myself that in some seasons of the year the quantity present approaches a good fraction of a grain of arsenic (metallic) in each gallon of water. The arsenical water is *habitually used for every purpose* by the inhabitants of the little village of Whitbeck.'

"From these analyses it will be seen that the arsenic exists in the very same form as that in Fowler's solution—namely, as arsenite of potass; and from the circumstance of common salt being also present, I have no doubt that a minute quantity of iodine is likewise contained in it. I may add, in reference to this point, that the sea is only a mile distant from the base of Black Combe, the mountain from which this stream descends.

"Another great medicinal advantage offered by this mineral water is that it may be employed in the form of baths. For proof that arsenic, especially when in solution, is capable of being absorbed through the unbroken skin, I may refer to the well-known and justly celebrated works of Dr. Alfred Taylor; and on the same authority, confirmed by other testimony, it may be stated that this substance does not accumulate in the system. Continued doses of the mineral water of Whitbeck may therefore be given without any fear of poisonous symptoms suddenly manifesting themselves. In fact, the chief beneficial effects of arsenic probably result from the greater activity induced by it in all the eliminating organs of the body, by which retained secretions and other noxious matters are discharged, and a more healthy action of the depurating tissues induced. Of the general salubrity of the district now under consideration, and of its many agreeable features as a place of resort for invalids, I can speak in the highest terms, and from personal experience, having for the last seven years visited it annually as a pleasant and salutary change from Newcastle. It is easy of access from all parts of the kingdom. There are within a short distance, especially in Whitehaven, several medical practitioners of high character and great ability; and were a demand to arise for increased accommodation for strangers, consequent on the use of the Whitbeck water as a remedial agent, there is every reason to think that the public-spirited nobleman who is the chief landed proprietor in that neighbourhood, and to whom the country is indebted for that beautiful part of England having been rendered more accessible, would afford all reasonable facilities."

ART. 6.—*On Tobacco, in its Relations to the Health
of Individuals and Communities.*

By DR. B. W. RICHARDSON.

(*Social Science Review.*)

In this elaborate paper Dr. Richardson describes in detail all the effects which, in his opinion, are produced in the body by tobacco as it is used by smokers. Condensed into a few sentences, the details may be summarized in the following manner:—

1. The effects that result from smoking are due to different agents imbibed by the smoker: viz., carbonic acid, ammonia, nicotine, a volatile empyreumatic substance, and a bitter extract. The more common effects are traceable to the carbonic acid and ammonia; the rarer and more severe to the nicotine, the empyreumatic substance, and the extract.

2. The effects produced are very transitory, the poisons finding a ready exit from the body.

3. All the evils of smoking are functional in character, and no confirmed smoker can ever be said, so long as he indulges in the habit, to be well: it does not follow, however, that he is becoming the subject of organic and fatal disease because he smokes.

4. Smoking produces disturbances: (a) In the blood, causing

undue fluidity, and change in the red corpuscles : (b) on the *stomach*, giving rise to debility, nausea, and in extreme cases sickness : (c) on the *heart*, producing debility of that organ, and irregular action : (d) on the *organs of sense*, causing in the extreme degree dilatation of the pupils of the eye, confusion of vision, bright lines, luminous specks, and long retention of images on the retina ; with other and analogous symptoms affecting the ear, viz., inability clearly to define sounds, and the annoyance of a sharp ringing sound like a whistle or a bell : (e) on the *brain*, suspending the waste of that organ, and oppressing it if it be duly nourished, but soothing it if it be exhausted : (f) on the *nervous filaments and sympathetic or organic nerves*, leading to deficient power in them, and to over-secretion in those surfaces—glands—over which the nerves exert a controlling force : (g) on the *mucous membrane* of the mouth, causing enlargement and soreness of the tonsils—smoker's sore throat—redness, dryness, and occasional peeling off of the membrane, and either unnatural firmness and contraction, or sponginess of the gums : (h) on the *bronchial surface of the lungs* when that is already irritable, sustaining the irritation, and increasing the cough.

5. The statements to the effect that tobacco smoke causes specific diseases such as insanity, epilepsy, St. Vitus's dance, apoplexy, organic disease of the heart, cancer, and consumption, have been made without any sufficient evidence or reference to facts ; all such statements are devoid of truth, and can never accomplish the object which those who propose them have in view.

6. As the human body is maintained alive and in full vigour by its capacity, within certain well-defined limits, to absorb and apply oxygen ; as the process of oxydation is most active and most required in those periods of life when the structures of the body are attaining their full development ; and as tobacco smoke possesses the power of arresting such oxydation, the habit of smoking is most deleterious to the young, causing in them impairment of growth, premature manhood, and physical degradation.

If the views thus epitomized, in relation to the influence of tobacco smoking on individuals, are true, we are led without any difficulty to the consideration of the influence exerted by the habit on communities and on nations. That which smoking effects, either as a pleasure or a penalty, on a man, it inflicts on any national representation of the same man, and taking it all in all, stripping from the argument the puerilities and exaggerations of those who claim to be the professed antagonists of the practice, it is fair to say, that, in the main, smoking is a luxury which any nation, of natural habits, would be better without. The luxury is not directly fatal to life, but its use conveys to the mind of the man who looks upon it calmly, the unmistakeable idea of physical degradation. Dr. Richardson does not hesitate to say that if a community of youths of both sexes, whose progenitors were finely formed and powerful, were to be trained to the early practice of smoking, and if marriage were to be confined to the smokers, an apparently new and a physically inferior race of men and women would be bred up. Of course such an experiment is impossible as we live ; for many of

our fathers do not smoke, and scarcely any of our mothers, and thus, to the credit of our women, chiefly, be it said, the integrity of the race is fairly preserved: with increasing knowledge we may hope that the same integrity will be further sustained: but still, the fact of what tobacco can do in its extreme action is not the less to be forgotten, for many evils are maintained because their full and worst effects are hidden from the sight.

Again, on the ground of the functional disturbances to which smoking gives rise in those who indulge in it, an argument may be used which goes very deeply, and cuts none the less sharply because, in one sense, it is ridiculous. Put down the smokers of Great Britain at a million in number—they are more than that, but let it pass:—Why should there exist perpetually a million of men, not one of whom can at any moment be writ down as in perfect health from day to day? Why should a million of men be living with stomachs that only partially digest, hearts that labour unnaturally, and blood that is not fully oxydised? In a purely philosophical point of view, the question admits of but one answer, viz., that the existence of such a million of imperfectly working living organisms is a national absurdity, a picture which, to a superior intelligence observing the whole and grasping it, would suggest a mania, foolish, ridiculous, and incomprehensible.

Dr. Richardson cannot say more against tobacco, however, without being led into a wider question, the use of luxuries altogether; on which question, he says, “If I were equally fair for tobacco as against it, I should be forced to give it a place as one of the least hurtful of luxuries.” It is on this ground, in fact, that tobacco holds so firm a position:—that of nearly every luxury it is the least injurious. It is innocuous as compared with alcohol, it does infinitely less harm than sugar; it is in no sense worse than tea; and by the side of high living altogether it contrasts most favourably. A thorough smoker may or may not be a hard drinker, but there is one thing he never is, a glutton; indeed there is no cure for gluttony and all its train of certain and fatal evils, like tobacco. In England this cure has been effected wholesale.

The friends of tobacco will add to these remarks, that their “friendly weed” is sometimes not only the least hurtful of luxuries, but the most reasonable. They will tell of the quiet which it brings to the overworn body, and to the irritable and restless mind. Their error is transparent and universal, but notwithstanding it is practical truth; for, in their acceptation, tobacco is a remedy for evils that lie deeper than its own, and as a remedy it will hold its place until those are removed.

ART. 7.—*Puddings without Eggs.*

By Dr. —.

(*Social Science Review*, July 25, 1863.)

It would be difficult to compute the number of unprincipled adventurers who thrive by means of sham appeals to the judgment

and improbable promises to the ear, of a discriminating (?) and highly gullible public.

These adventurers comprise a motley group, from the itinerant *Æsculapii*, or street vendors, up to the advertising millionnaires, who offer nostrums to cure every species of disorder to which humanity is heir. Hence, we have innumerable specifics for most real or imaginary ailments ; plaasters that eradicate corns, roots that cure the toothache, lozenges that remove the asthma, candies that put to flight the influenza, syrups that soothe the throes of infancy, and alleviate the rheum of old age, pills that rectify the most shattered constitution, draughts that insure perfect health and longevity, powders that, if they do not exactly bring the dead to life, may very possibly effect the contrary process.

All are constantly advertised in a manner at once flashy and attractive, replete with paradoxical terms, unknown to any recognised or intelligible pharmacopeia !

The success attendant upon impostors of this class, has led others, not less morally obnoxious, into the field : now, our bread can be made without yeast, our puddings without eggs, and our pastry without butter ! So that if a determined stand be not made against such innovations upon the accustomed arrangements of our *cuisine*, there is no telling what may be set upon our tables, and how soon our bodies may become attenuated for want of the usual elements necessary for nutrition. Lately, a packet of a so-called "German Baking Powder" has been submitted for our inspection. The prospectus in which it is wrapped, sets forth in most glowing terms the praise of this very questionable commodity : it asserts that bread made with this powder is more nutritive and wholesome than that ordinarily manufactured, and that a larger amount of the "staff of life" is obtained from the same quantity of flour, by the use of this wonderful ingredient ! To the dyspeptic it is invaluable, as it is one of the most effectual preventives of indigestion ; it is also, we are assured, equally valuable (?) in making puddings and pastry, which it deprives of all their indigestible proportions, and if dripping or lard be used instead of butter, it removes all unpleasant taste !

It appears, from the results of a chemical analysis of these powders, that "they consist of carbonate of soda and tartaric acid, combined with a small proportion of rice or other flour : when mixed with water, as occurs when pastry is made, carbonic acid is liberated, and tartrate of soda formed : they are used chiefly to render pastry light, and do not generally contain any ingredients of an injurious character, although of course they are in themselves non-nutritious. Egg powders are more objectionable, because sometimes coloured with chromate of lead, and also for the reason that they are substituted for eggs, and not possessing any of their nutritive properties."*

The inventor of this remarkable powder must have had unshaking faith in the credulity of the public, as well as a knowledge of their reluctance to employ their reasoning faculties, when puffing

* *The Lancet.*

advertisements are submitted to their attention. To our mind it does not require very subtle penetration to discover the fact, that a mere powder composed of soda and tartaric acid, mixed with a small portion of rice flour, though free from more objectionable compounds, cannot become a proper substitute for eggs and butter; yet that many act upon such a supposition there can be little doubt, as we have ascertained that about one ton per day of the questionable article is consumed. Apart from such palpable fraud itself, the use of these baking powders should be discountenanced on social and hygienic grounds; the employment of cheap and inferior substitutes for the genuine article is fraught with much evil in cookery, even more than in trade; these practices stand as a temptation in the way of domestic servants, who, possibly accrediting, in some degree, the virtues so falsely and impudently affirmed to reside in these compounds, are induced not only to cheat their employers out of the nutriment which their bodies ought to receive, but to rob their pockets into the bargain.

ART. 8.—*Poisoning by Milk.*

By Dr. ——.

(*Medical Times and Gazette*, January 31, 1863.)

A number of persons occupying two of the principal hotels at Valletta, Malta, were seized, on the morning of the 17th inst., with symptoms of irritant poisoning. The *Malta Times* states that—

"All the sufferers were seized within twenty minutes to two or three hours after breakfast; and as the only article of diet common to all was milk, and as on other occasions of similar seizure the cause was clearly traced to that article, it is reasonable to infer that in the present instance the milk used for breakfast contained the poisonous ingredient. This conclusion becomes almost a certainty when it is known that several persons, living in the same hotels, who had not taken milk that day, escaped, while, without one exception, those who had taken it were seized with the alarming illness described. Several families in Valletta, it is said, were attacked in like manner the same morning, after partaking of milk for breakfast; even a cat, which had taken some, showed the same symptoms of having been poisoned. Towards the end of last year a number of exactly similar cases happened at Sliema, where the whole family of a field officer, with one exception, was poisoned, evidently by goat's milk; and about the same time other cases occurred among the officers and men of her Majesty's ships *Marlborough*, *Algiers*, and *Firebrand*, but with no fatal consequences. We have also heard of other cases occurring from time to time. Poisoning by milk, therefore, appears to be not an uncommon occurrence in Malta; but we are not aware if experiments were ever made by scientific men to ascertain beyond doubt the real cause of the milk assuming this dangerous character. The natives attribute it to the goats browsing on a particular plant belonging to the natural family, *Euphorbiaceæ*, or spurge-worts, which they call *tenhuta*, and which, they say, pos-

seses the property of rendering the milk poisonous to human beings, without inflicting any serious injury on the animal itself. On the other hand, we have heard this popular belief ridiculed by some of the more learned Maltese physicians, although we must confess we never could perceive upon what grounds. We are glad to learn that his Excellency the Governor has ordered a searching inquiry into the matter, and we hope the result will be the adoption of means, if possible, to prevent such serious endangering of life by a common article of daily food for the future."

It is well known that the *latex* of most of the plants belonging to the order *Euphorbiaceæ* has acrid and purgative properties; and it has also been observed that in certain districts of America the milk and flesh of cows have been rendered poisonous by particular pastures, without the health of the animals being affected. Like instances of numbers of people being poisoned by milk have been noted in various parts of the continent; amongst others, at Aurillac, in France, and at Hereford, in Westphalia. The latter cases have been long popularly attributed to the cattle having fed on the *Euphorbia esula*. Such a notion has, nevertheless, been negatived by continental toxicologists, on the ground that cattle refuse the *Euphorbia* as long as grass and other wholesome vegetables occur in their pastureage; yet this may be only the cause why such accidents do not occur more frequently. It is a mistaken idea that the instinct of ruminants in the choice of herbage always leads them to refuse poisonous plants. Oxen will eat the berries and leaves of the yew, and frequently die in consequence, either from the immediate effects of the poison on the nervous system, or subsequently from inflammation of the alimentary canal.

ART. 9.—*Epidemic from Eating the Meat of a Diseased Cow.*

By Dr. HUSEMANN of Detmold.

(*Medical Times and Gazette*, December 13, 1862.)

Dr. Husemann, of Detmold, gave an account to the Congress of German naturalists and physicians, of a new epidemic disease, which had been observed by him in August, 1862, and which was caused by eating the flesh of a diseased cow. About 150 persons were affected. The epidemic was novel in etiology as well as with regard to the symptoms. There were three forms of it: one was very mild, the patients suffering from diarrhoea without fever; another was more severe; there being rigors, febrile symptoms, vomiting, diarrhoea, cerebral symptoms, and violent pains in the abdomen, with great sensitiveness to pressure: the symptoms continued for about a week. The third form was the most severe; there was general collapse, coldness of the extremities, scarcely perceptible pulse, etc. Death ensued in three cases, and convalescence was much protracted in the others. The post-mortem appearances were gastro-enteritis, and hyperæmia and extravasation in the cerebral meninges, the blood being dark and very fluid. There was no retention of urine, and no difficulty of deglutition, whereby the

epidemic was distinguished from cholera, and from poisoning with sausages. The cow had had a fracture of the ribs and pleurisy, and it was, therefore, probable that the meat had been poisoned in consequence of pyæmia. The meat was poisonous whether roasted or boiled.

ART. 10.—*On Measly Pork.*

By M. DELPECH.

(*British Medical Journal*, February 21, 1863.)

M. Delpech has just read a paper at the French Academy of Medicine on the hygiene of measly pork.

The "leprosy" of pork, he concludes, consists in the presence of cysticerci in the tissues of the animal, and especially in its muscular tissue.

Taken into the human stomach with the meat raw or not well cooked, these animals are the most common, if not the sole source of the development of this entozoon.

The researches, however, of Weiss of St. Petersburg on the flesh of raw beef, and the curious facts collected by M. Judas from the reports of the military medical men, who have pointed out the endemicity of the animals in Algeria, show that further investigations are required to prove that the affection has no other origin.

The cysticerci exposed for some length of time to a temperature of 100° centigrade (212° Fahr.) are destroyed, and the flesh containing them thereupon loses its hurtful properties.

The cysticerci are rarely found in the fat. Measly pork, therefore, cooked in the neighbourhood of the abattoirs, under the surveillance of the police, may be safely employed as an article of food ; and the fat may be also safely employed.

The cysticerci in the pig are derived from the ingestion of the ova of the *taenia solium*, or some other species of worms enclosing the ova, which they find in human excrements. This diseased condition of pork results originally from the filthy condition in which the pigs are kept.

It would be well to spread these facts widely and authoritatively amongst those who breed pigs. During life, the characters of this condition of the pig are obscure. The presence of sublingual vesicles, when it exists, is the only sure sign.

These different conditions have caused the authorities to prohibit the sale of diseased pork ; but we may now consider that this prohibition should be removed. Moreover, the loss ought to fall on the person who fed the animal, and not on the butcher who buys it for sale. This would cause the breeder to be more careful in the keeping and feeding of his pigs.

ART. 11.—*On Siguatera, or Fish-Poison Disease.*

By Dr. ——.

(Social Science Review, July 19, 1863.)

There are six varieties of poisonous fishes already known and described—viz.: the perches, the gurnards, the flounders, the spares, the gobies, the sardines, and the globe fishes, the last including two forms—the *Diodon* and the *Tetrodon*.

Confining our attention exclusively to these poisonons fishes, we find that they are most common in the following localities—at all events, that they have been discovered in these localities more frequently than elsewhere: in the Caribbean Sea, off Brazil, New Caledonia, the Seychelles, the Chinese Sea, the Malabar coast and other parts of India.

It should be remarked, that in these poisonous fishes the digestive organs, the spawn and the liver, are invariably most dangerous; and that there are many fishes that may be eaten with the greatest safety when those parts are avoided. Another fact worthy of notice is the age of the fishes: some are dangerous when they have arrived at maturity. The *Lethrinus mambu*, for example, can be safely eaten when very young, but afterwards is exceedingly dangerous. Some naturalists attribute the poisonous qualities to the food found in the seas frequented by certain classes of these fishes. This is true under some circumstances, as in the case of the *Meletta venenosa*, which at certain seasons of the year feeds upon a green monad which covers the sea in large quantities. Wherever this green monad is seen the *Meletta* is poisonous, but wherever it has not appeared the same fishes are eaten with the greatest safety. MM. Fonssagrives and Méricourt agree with M. de Rochas in his opinion respecting the spawn, and with him consider it as the most poisonous part. If such be the case, it could soon be determined by ascertaining whether the injurious properties of the fishes are permanent, whether in the same species adults only are poisonous in their effects, and whether there is poison in those fishes only which contain spawn. To decide these questions, comparative experiments might be made with the male and female fishes of the same species inhabiting the same streams of water. If it were found that the latter only were injurious, the difficulty would be satisfactorily solved.

The Spanish colonists gave the name of *Siguatera* to that union of symptoms which results from the eating of poisonous fishes indigenous to hot countries. The symptoms which arise are of two kinds—severe attacks of indigestion or gastro-enteritic poisoning; or an iey coldness and depression, accompanied with great nervous disturbance. The symptoms are the same, whether severe enough to cause death, or only to excite inconvenience or temporary derangement; they differ only, i. e., in intensity. Gastro-enteritic *Siguatera* has all the appearance of a severe attack of indigestion—viz., nausea, vomiting—first of the food, then of mucus—coldness, de-

pression of the pulse, cramp, and diarrhoea. The nervous type of symptoms—viz., convulsion and paralysis, which characterize the process of poisoning by fishes, are not to be found in any case of metallic poisoning. They seem to arise from a combination of accidents, as if they had been produced by different vegetable poisons of narcotic and acrid character. When the *Siguatera* assumes a gastro-enteritic form, the sufferer is, in general, quickly restored to health; while the nervous symptoms leave behind them the most serious traces of debility and irregularity. These have been known to continue for eight or nine days.

As illustrating the way in which the members of crews of vessels are poisoned by the eating of poisonous fishes, the following facts from the "Linnæan Transactions" for November, 1860, are valuable. The history of the circumstance was communicated by Mr. H. Jameson, of her Majesty's ship *Winchester*, to Sir William Burnett. The accident occurred on board the Dutch ship *Postillion*, lying in Simon's Bay, Cape of Good Hope. The *Winchester* being near, Mr. Jameson was called to render his services to the sufferers. On arrival he found that the boatswain's mate and purser's steward had been suddenly taken ill after eating a part of a well-known deleterious fish, common in Simon's Bay, and called the toad or bladder-fish—the *Diodon*. They had been warned that the fish was poisonous, but were resolved to try the experiment, the boatswain declaring that the liver was not poisonous, but a great delicacy. They had partaken of dinner at twelve o'clock; immediately afterwards they partook of the fish, and scarcely ten minutes had elapsed when the boatswain became so ill that he was unable to raise himself without the greatest difficulty; his face was somewhat flushed; his eyes glistened, the pupils were rather contracted; his mouth was open; the lips were tumid and somewhat blue; the forehead covered with perspiration; the pulse weak, quick, and intermittent. The patient was extremely uneasy and in great distress, but still conscious; he complained of pain from constriction of the throat, and appeared inclined to vomit. It was with difficulty he could swallow a powder with some warm water. His state quickly assumed a paralytic form; his eyes became fixed in one direction; his breathing was difficult, and accompanied with dilatation of the nostrils; his face was pale, and covered with cold perspiration, his lips livid; his consciousness and pulse failed, and in scarcely seventeen minutes after partaking of the fish he was dead. The symptoms exhibited by the purser's steward were of a similar kind. He also died within twenty minutes of the time after he had partaken of the fish.

The quantity consumed between the two men was only the liver of one fish; the liver might have weighed about four drachms. The entire fish measured only from six to eight inches in length.

Other examples similar to the above have been recorded by Praeger; in all, death was rapid, but we cannot stop to chronicle these, as the effects were the same as in the instances above cited.

(B) CONCERNING ACUTE DISEASES.

ART. 12.—*A Contribution to the Therapeutics of Continued Fever.*

By Dr. T. KING CHAMBERS, Physician to St. Mary's Hospital, &c.

(*Proceedings of the Royal Medico-Chirurgical Society, April 28, 1863.*)

Analysis of 214 cases of continued fever:—

108 treated on "general principles;"

106 treated on a uniform plan of continuous nutriment and hydrochloric acid.

The first series occurred during the six years ending September, 1857; the second series during the five and a half years ending March 31st, 1863.

Reasons for the cases being fairly comparable:— 1. They are each a consecutive series. 2. They are spread over a considerable period of years. 3. All treated by the same physician, and under similar circumstances. 4. Diagnosed and recorded by independent registrars. 5. The equality of the cases is shown by the equality of the mean duration of their convalescence.

Of the first series:—

of 13 entered as typhus, 3 died;

of 39 entered as typhoid, 16 died;

of 56 of doubtful type, 3 died.

Of 108, total of continued fever, 22 died.

Of the second series:—

of 19 entered as typhus, none died;

of 48 entered as typhoid, 2 died;

of 39 of doubtful type, 2 died.

Of 106, total of continued fever, 4 died.

Excluding from the first series 2, and from the second 1, who died within two days of admission, and gave therefore little scope for judging of the effects of treatment, there remains less than 1 in 5 as the death-rate under the first treatment, and less than 1 in 35 as the death-rate under the second treatment. Therefore the second method of treatment is a powerful means of preserving life.

[In the discussion which followed the reading of this paper, Dr. Murchison said that the treatment recommended by Dr. Chambers closely resembled what he had followed at the Fever Hospital, during the last 18 months. The treatment of typhus and allied fevers by the mineral acids was a very old one; it had long been the favourite treatment in many parts of Europe, particularly in Germany and Sweden. At the same time, he had not that implicit faith in it which Dr. Chambers appeared to have, and he must protest against Dr. Chambers's inference that his treatment was calculated to prevent 16 out of every 18 deaths from fever. Dr. Murchison had employed the mineral acids, in conjunction with wine and abundance

of fluid nutriment, in upwards of 1500 cases, and although he had often seen the most marked improvement (cleaning of the tongue, &c.) follow the use of the acids, his statistical results had been much less favourable than those now announced to the Society. He was convinced that, with more extended experience, Dr. Chambers would be compelled to modify his opinion. Dr. Chambers's statistics were open to several fallacies. 1. The cases selected for comparing the results of different plans of treatment had occurred at different periods, instead of at the same time. 2. In both series, the form of fever had not been determined in a large proportion of the cases, and no details had been given to enable any one to judge of their nature or severity. Many of the cases "of doubtful type" had probably been examples of simple fever, which was rarely fatal under any method of treatment. The results would be materially affected by the proportion of cases of simple fever or febricula in either series. 3. The rate of mortality in the first series, treated "on general principles," was far above the average mortality from fever in general hospitals, and hence it was not a fair standard of comparison. The total mortality in this series (including febricula) had been 20 per cent., for typhus alone 23 per cent., and for enteric fever no less than 41 per cent. 4. The ages of the patients suffering from the different forms of fever had not been given. Age exercised little or no influence over the rate of mortality of enteric fever; but in the case of typhus, the results of different methods of treatment could never be satisfactorily compared without taking the ages of the patients into consideration. Under twenty years of age, typhus was rarely fatal; above fifty, the mortality was nearly 60 per cent. 5. The number of cases was too small to warrant any decided opinion as to the advantages of the treatment recommended. The second series included only 19 cases of typhus and 48 of enteric fever, diagnosed as such. A practitioner, with extensive experience in fever, might often have 20 cases of typhus in succession under his care, without losing a single case; but then if he lost 5 cases, the total mortality would be 20 per cent. During last autumn, of 41 successive cases of enteric fever, under Dr. Murchison's care, only 2 died, one from perforation of the bowels, and the other from acute tuberculosis—lesions not likely to have been cured by any treatment, yet the rate of mortality for the entire year had been considerably greater. Most of the 41 cases had been severe, but in none had a drop of hydrochloric acid been administered. Dr. Murchison doubted if hydrochloric acid possessed advantages over the other mineral acids. Although he believed that the treatment of continued fevers by the mineral acids, together with an uniform system of nourishment, was justified by our knowledge of the pathology of fever, as well as by experience, he was confident that Dr. Chambers's statements were calculated to make those who heard them too sanguine as to the results to be obtained from it.]

ART. 13.—*On the Prevalence of Typhus Fever in London.*

By Mr. ——.

(Lancet, October 31, 1863.)

Typhus fever has been epidemic in London since 1861. The fact and its cause are ably commented on in an editorial article of the *Lancet*, to which the statistics of the London Fever Hospital supply the text, and from which we take the following passages:—

"The admissions into the London Fever Hospital form the only accurate measure of the fluctuations of the disease in question, inasmuch as the returns of the Registrar-General include all forms of continued fevers and deaths from many other acute diseases under the common designation *typhus*. It may be mentioned, however, that it appears from the Registrar-General's Reports that the deaths from 'typhus' in the metropolis, which in 1860 did not exceed 1392, rose in 1862 to 3635, and during the first nine months of the present year (January 3rd to October 10th) have amounted to 2111.

"In the years 1858, 1859, and 1860, true maculated typhus had well-nigh disappeared from London. In 1858 the number of cases admitted into the London Fever Hospital did not exceed 15, several of which were of doubtful character, and for many months not a single example of the disease was observed. In the year 1860 the number of admissions into the Fever Hospital for all causes did not exceed 391, of which the typhus cases constituted but a small fraction. At this time, indeed, the Committee of Management contemplated the conversion of the institution into an hospital for general diseases. In October, 1861, the number of admissions began to increase, and in 1862 it rose to 2699, or exceeded the largest number of admissions in any previous year of the hospital's history by nearly 1000. This great increase was entirely due to typhus fever, and it may be mentioned that during a great part of 1862, patients were almost daily refused admission for want of room. The cases were most numerous in the months of March, April and May. As the summer of 1862 advanced, the epidemic appeared to subside, and, with the exception of a slight exacerbation in the cold months of November and January, it has continued to do so until the autumn of the present year, when it has again experienced a rapid increase. On August 31st there were in the Fever Hospital 80 patients, of whom a considerable proportion were suffering from diseases other than typhus fever. At the end of September there were 134 patients, and on October 20th, 188; during the last fortnight numerous applicants have been refused admission, all the beds being occupied. The whole of the increase has been due to typhus. The fluctuations of the epidemic will be readily understood by referring to the monthly admissions for typhus into the hospital since September, 1861, which have been as follows. From these numbers all cases other than typhus have been carefully excluded.

	1861.	1862.	1863.
January	—	142	123
February	—	154	91
March	—	210	85
April	—	225	92
May	—	215	49
June	—	163	43
July	—	145	65
August	—	143	66
September	2	103	97
October	12	108	104*
November	8	122	—
December	21	97	—

"The epidemic has throughout been confined to the poorest and most densely populated parts of the metropolis. In 1862, 1827 cases of typhus were admitted into the Fever Hospital. Of the 56 districts into which London is divided, St. George's-in-the-East furnished 179 cases; St. Pancras, 162; the City of London, 157; St. Marylebone, 116; Lambeth, 107; Holborn, 101; Greenwich and Deptford, 93; and the Strand, 56: whereas, not one case of typhus came from St. George's, Hanover-square, from which patients suffering from other forms of fever were derived. Of the cases admitted from January 1st to October 20th of 1863, it will be seen from the table which we have prepared (p. 522), that 277 have been brought from the South Division of the metropolis, 215 from the East, 144 from the North, 103 from the Central, and 50 from the West. The parishes which have supplied the largest number of cases are St. George's-in-the-East (103), Bermondsey (77), Lambeth (72), Marylebone (73), St. Pancras (46), Greenwich and Deptford (43), and Stepney (41). The several districts and parishes have exhibited remarkable fluctuations in the prevalence of the disease. Thus, during the first six months of this year, the East Division of London furnished 159 cases, and the North 121, but the South only 73. Since July 1st, these proportions have been reversed, the South having furnished 204 cases, the East 54 cases, and the North 23 cases. During the first three months of the year, 60 cases came from Marylebone; but in the subsequent six months, only nine cases. On the other hand, during the first six months of the year, only 7 cases came from Bermondsey, 10 from Lambeth, and 2 from Rotherhithe; but since July 1st, Bermondsey has supplied 70 cases, Lambeth 62, and Rotherhithe 25. St. George's-in-the-East and St. Pancras are the parishes which have furnished the most constant and equable supply. The recent increase of typhus has mainly occurred in the parishes of Lambeth, Bermondsey, Rotherhithe, and St. George's-in-the-East; although the admissions into the Fever Hospital during the last three weeks indicate a slight increase in almost all the parishes of London.

"All the patients who have been admitted into the Fever Hospital

* This number only includes the admissions from Oct. 1st to Oct. 20th, inclusive.

suffering from typhus have belonged to the very poorest class; and many of them have been in a state of extreme destitution, verging on starvation, for weeks or months before their illness. During the year 1862, no fewer than 32 deaths from starvation were reported as having occurred in London; while a large number of patients were sent to the Fever Hospital whose complaint was not fever, but exhaustion consequent on want.

"The circumstances preceding the present epidemic of typhus in London did not differ from those of previous epidemics. There was no failure of the crops in England, but for some time before there had been great distress amongst the poor of London consequent on the organized system of strikes, the effects of which had only been temporarily averted by the relief from the societies for promoting the short-hour movement. As in 1826, 1836, and 1856, an artificial scarcity was the result. In addition to this, the great distress in the provinces caused the poor population of London to be condensed by the arrival of labourers from the country in search of work. It was ascertained that almost all of the first cases admitted into the Fever Hospital were male tramps, with no fixed residence, out of employment, and who had been suffering for many weeks from want. There was no evidence, however, that they had come from infected localities or imported the fever into London. Only a small proportion of them were Irish, and none had arrived recently from Ireland. The cause of the epidemic, in fact, appeared to have been overcrowding consequent on an extraordinary amount of destitution.

"It is worthy of remark that a similar observation was made with regard to the epidemic of typhus at Preston in the autumn of 1862. According to the most reliable evidence, true typhus fever had not been seen at Preston for a long time before the outbreak in question, and no attempt had been made to show that it was imported. But the population had been for months before in a state of great destitution, and the result of this destitution was overrowing. From the daily reports in the *Times* it appeared that numerous cottages at Preston were untenanted, from the inability of the previous tenants to pay the rents; and that it was the practice for several families to congregate in one house. As many as six different families are said to have been collected in one house of the average size for one family. Moreover, the result of the Government inquiry into the matter was to show that the first cases of true typhus observed at Preston occurred in a family of four persons, who had been living in a small room with only 600 cubic feet of space, and who were in a state of extreme want. The immense amount of pecuniary relief sent to the distressed operatives in Lancashire, the ability with which this relief was distributed, and the energetic measures adopted by Government in conjunction with the local authorities for arresting the spread of the fever after it commenced, probably prevented an epidemic of typhus like that which resulted from the Irish famine in 1847. Notwithstanding the great distress, it has been repeatedly stated that throughout the cotton districts of Lancashire there has not been a single death from starvation.

"It is a remarkable fact that Edinburgh, where typhus fever was

formerly so prevalent, has hitherto remained exempt from the present epidemic. Last year, indeed, when the disease raged so furiously in London, we are informed by Dr. Christison that typhus had almost flattered the inhabitants of the northern capital with its extinction. Dr. Christison thinks that typhus has of late years been wearing itself out at Edinburgh, and attributes the circumstance to a change in the constitutional type of epidemic diseases. But if this be so, how are we to account for the disease being so rife in London while it is almost unknown in Edinburgh? Are we to suppose that the constitutional type of epidemic diseases is different in the two cities? Surely it is more rational to refer the London epidemic to local causes, which have not been in operation at Edinburgh.

"The rapid increase in the prevalence of typhus in London, occurring so early in the autumn, forebodes a serious amount of the disease in the coming winter. As a rule, typhus increases during the cold months, and does not reach its greatest intensity until early spring. The more severe the winter, the more prevalent will the disease probably become. With the above facts before them, the physicians of the London Fever Hospital have opportunely addressed a communication to the Medical Officer of the Privy Council, to which we especially invite attention. They point out the necessity for making provision for the isolation of the patients, and justly observe that to retain typhus patients in the dwellings of the poor, or to receive them into ordinary hospitals or into workhouses, under the same roof with other patients, is inevitably to extend and intensify the disease. We understand also that the Committee of Management of the Fever Hospital contemplate the erection of temporary wooden buildings for the accommodation of additional patients, and we earnestly trust that this proposal may be carried into execution without delay. If by such a measure the hospital succeed in arresting the progress of the epidemic in any district of the metropolis, it will be entitled to the lasting gratitude of the community. Prompt isolation of the sick, however, although necessary, is not sufficient. Our Medical Officers of Health and local authorities must bestir themselves, to prevent the crowding of our poor population, and to enforce ventilation; while a portion of that great stream of public liberality which has flowed so freely northwards must be directed towards our London Poor."

ART. 14.—*On the Disinfecting Treatment of Cholera.*

By DR. MACKAY.

(*Madras Quarterly Journal of Medicine*, April 1863.)

Dr. Mackay treated the three cases which are given below in the Hospital at Perambore, Madras. He also refers to the three other cases treated in the same establishment subsequently, and with the same satisfactory results. Commenting upon them, he says:—

"We are aware that it would be absurd to draw any conclusions from so small a number of cases, but it will be admitted that five

successive cures, at a time when the disease was prevalent and fatal, is encouraging; and they are recorded in the hope of attracting attention to the disinfecting treatment of this disease, which, as far as we know, has not hitherto been fairly tried. We do not mean to say that calcis chlorinata is the best remedy to use, but it happened to be the only one of the class at hand. It is a powerful stimulant which may add to its efficacy, and it is remarkable how well it was retained in the above cases, whether given by the mouth or as an enema. Besides the remedies mentioned, the floor of the hospital ward and the patients' beds were frequently sprinkled with a solution of chloride of lime, thus keeping up a continuous exhalation of chlorine gas, which must have been inhaled by the patients. The surface of the patients' bodies was sponged with a tepid lotion composed of Norton's Deodorising Fluid. Chloride of lime was also put into the vessels in which the evacuations were received, these were at once carried away and their contents buried under ground. Whether any of these measures have any beneficial influence on the patients there cannot be a doubt that they should never be neglected, with a view to preventing the spread of the disease. The disinfecting treatment has been found useful in typhus and enteric fever, and is surely worthy of a fair trial in cholera."

CASE I. *Cholera Spasmodica: Cure.*—Private Dalliah, æt. 27 years, was admitted at 9 A.M. on the 15th November, 1862. Stated that he had been purged four times since 7 A.M. His pulse was good and his skin natural. A dose of chalk mixture with catechu and opium was given; within half an hour after taking this, he had two loose motions, slightly coloured; the medicine was repeated. At 11 A.M. he vomited, and again at 1 P.M., both times bringing up fluid not quite colourless. At 2 P.M. he had a watery colourless motion, after which he complained much of cramps in the legs. An enema was then given, composed of liquor calcis chlorinat. ℥ xxx; Aqua ʒ ij, and repeated in half an hour. A draught was also given composed of liq. calcis chlorinat. ℥ xx; Aquæ ʒ ij; and frictions with turpentine ordered to be used to the extremities. The enemas and draught were retained, and he had no return of vomiting or purging for three hours; but the cramps continued, pulse became weaker, and his voice sank. During the night he had several watery colourless motions, and vomited twice. Cramps continued. The enema was repeated, the quantity of liq. calcis chlorinat. being increased to ʒ j. His pulse became very low, ammonia sesquicarb. in aqua camphora was ordered. The cramps now ceased, and did not return, and the patient gradually rallied. During the day of the 16th he passed three watery colourless motions, no urine; but his pulse improved gradually, and he was able to retain some arrow-root congee. A sinapisin was applied to the loins in the evening. On the morning of the 17th he was reported to have had three watery motions of the same kind during the night. No urine; pulse the same; he was then ordered pot. chloras. gr. v; acid. hydrochloric. dil. ℥ x; camphor. gr. v; to be given in water every two hours. He took five doses during the day, passed a little urine (first at 9 A.M.) and had three watery motions slightly tinged with bile. From this time he gradually improved. His recovery was tedious, but he had no return of the cholera symptoms. On the 21st he had a threatening of congestion of the lungs, which passed off under the use of counter-irritation, &c., and he suffered

from debility for some time. He is naturally a weakly man, and was not fit to return to his duty till the 14th of the following month.

CASE II. *Cholera Spasmodica: Cure.*—Private Sheik Mootooza, æt. 27 years, came to hospital on the 15th of November, 1862, at 1 P.M. Said he had been purged several times; his pulse was good, and he was given chalk mixture with catechu and opium. During the next hour he was purged three times—the first two motions were slightly coloured, the third like rice water, and he vomited once. At 2 P.M. an enema with liq. calcis chlorinat. m xxx. was given, and repeated in half an hour. These were both retained. At 3 P.M. he took a draught with liqr. calcis chlorinat. m xx. Up to 5 P.M. he had no return of vomiting or purging, but complained of cramps, for which frictions of turpentine were used. Between 5 and 7 P.M. he had three scanty motions, after which he became very restless, and pulse very weak, his face looked ghastly, and voice sunk. An enema was given containing liq. calcis chlorinat. z j , and retained. During the night he took three doses of ammon. sesquicarb. gr. v, in camphor mixture, and was able to retain some congee. On the morning of the 16th his pulse was hardly perceptible, but skin not quite cold: face and voice still sunk; no urine; no return of vomiting or purging. The ammon. sesquicarb. was continued, and he was ordered to have as much congee or chicken broth as he would take.

4 P.M.—Four motions since the morning, watery, but slightly coloured; no vomiting; no urine; no cramps; pulse slightly improved. Ammon. sesquicarb. continued, and a sinapis applied to the loins. On the morning of the 17th was reported to have had two motions during the night, watery and again colourless; had passed no urine; pulse not improved. The following mixture was ordered. Potass. chloratis gr. v; acid. hydrochl. dil. m xxx; camphor. gr. v; in aquæ z j ; to be given every two hours. At 4 P.M. he had taken five doses of the mixture, had had two watery coloured motions, retained some nourishment, and passed a little urine (the first at 8 A.M.) His pulse was improved. In this case the secretion of urine was very slowly restored, and the patient had a tendency to coma. It was not till the morning of the 20th that urine was passed in any quantity under the use of diuretics, counter-irritation to the loins, and fomentations to the abdomen. From this time the patient rallied rapidly and was discharged on the 26th.

CASE III. *Cholera Spasmodica: Cure.*—Private Sheik Ismael, æt. 34 years, was admitted into hospital on the 17th November, 1862, at 11 A.M. Stated that he had been purged five times since 2 A.M., his pulse was pretty good, but he complained of cramps in the lower extremities and muscles of the chest. He was immediately given liq. calcis chlorinat. m xx; aquæ z j . Up to 4 P.M. he had three watery colourless motions, and also vomited fluid of the same appearance. He had taken three of the above-mentioned draughts. The cramps had been relieved by frictions with turpentine. His pulse was getting very weak, and voice sunk. The draughts were ordered to be continued, and an enema was given immediately, composed of liq. calcis chlorinat. z j ; aquæ z iv ; this was retained for half an hour.

During the night he took six doses of liq. calcis chlorinat.; had five copious rice water evacuations. On the morning of the 18th, he passed some urine, his pulse was very weak, but the temperature of the skin good, and he had no more vomiting. He was now ordered ammon. hydroch. gr. v; acid. nitro muriatic. dil. m xv.; aquæ z iss , every three hours. The next motion was watery, but slightly coloured. From this time he gradually improved, and was discharged well on the 25th.

ART. 15.—*On the Treatment of Rheumatic Fever.*

By Dr. J. BIRKBECK NEVINS, Lecturer on Materia Medica,
Royal Infirmary School of Medicine, Liverpool.

(*British Medical Journal*, August, 1863.)

In a paper read 24th June, 1863, at a meeting of the Lancashire and Cheshire Branch of the British Medical Association, Dr. Nevins says:—

"The plan of treatment about to be laid before you is one for which I am not able to claim the credit of originality, but it is a method which I have adopted for above fifteen years both in private practice and in an union hospital containing above one hundred and fifty beds; and I think that, if its advantages were more generally known, it would be more frequently practised. During this period I have made trial also of the various modes of treatment which have prominently occupied the attention of the profession; viz., the opiate, the alkaline, the lemon-juice, and the do-nothing treatment; but I always return to my accustomed plan, with confidence rather increased than diminished by the comparison with others. At the same time, I am bound to confess that this treatment will come before you with one very serious defect, which it is vain now to attempt supplying—viz., the absence of detailed clinical reports of the cases treated; and I am unable, therefore, to say how many have been cured, or how many days have been required before the patients could walk about, how many before they could leave the hospital, or how many before they could go about their work as usual. Such phrases as 'I feel very confident,' 'I am thoroughly convinced,' and the like, are the nearest approach to accuracy now attainable; and I am well aware how much this absence of exactness lessens the value of any conclusions respecting the result of treatment in such a disease as rheumatic fever. With these preliminary remarks, I will now proceed to the details of the method.

It is impossible to observe many cases of rheumatic fever without being struck by the periodicity of the disease, as shown by the general aggravation of the pain and other symptoms as night comes on, and also by the copious sweating, which enfeebles the patient, rather than relieves him. The long continuance of the illness, and its liability to return after apparent recovery, and the length of time requisite for regaining strength, are also well-known features. In some of these particulars, but especially in its periodical exacerbations and in its sweatings, Heberden and others, and Dr. Davis of University College, in a very able paper on the subject, have at different times noted its similarity to ague, and advocated the employment of cinchona or quinine for its cure; and it is this drug upon which I look as the basis of the treatment to be proposed to you. At the same time, the experience of the profession generally has shown the great value of iodide of potassium in chronic rheumatism; and, remembering the tendency of this disease to become chronic, I always combine this medicine with the quinine, and commence their administration from the earliest date at which the

patient comes under my care. The presence of acute pain and high febrile excitement does not, in my experience, form any objection to their employment; and the thick creamy fur upon the tongue disappears more rapidly under their use than under the different methods which I have compared with it, either in my own practice, or when noticing that of my brethren in the profession. The dose never exceeds two grains of quinine four times a day, with five grains of iodide of potassium added to each dose.

"The pain and loss of rest are, however, so distressing to the patient, that we have been advised to administer opium in quantities only limited by the effect produced. And the employment of this drug as far as may be necessary for subduing the pain is a very important point; and I therefore always leave two or three doses of opium pill or of Dover's powder with the nurse, which are to be given successively, if the patient is in severe pain; but I very rarely indeed find that the patient has even asked for more than a single dose in the twenty-four hours, which I attribute to the speedy and more permanent relief obtained by the following element of the treatment, to which I attach very great importance. This is, *the employment from the very first of steam-baths, even when the patient is so helpless that it is impossible to move him from the bed on which he is lying.* These steam baths relieve the pain and check the distressing perspirations in a degree which I have failed to obtain by any other mode of treatment; and they are administered with the greatest ease in the following manner.

"A couple of common red bricks are to be placed in an oven hot enough for baking bread, and in half an hour or little more they are sufficiently heated for the purpose. The patient's body-linen having been previously removed, these two bricks are to be folded up in a piece of common thick flannel thoroughly soaked in vinegar and laid upon two plates; and one is to be placed about a foot distant from one shoulder, and the other about equally distant from the opposite leg;* and the bed-clothes are then to cover the bricks and the patient closely round his neck. A most refreshing acid steam bath is thus obtained; and the supply of steam may be kept up, if necessary, by removing one brick and replacing it with another hot one kept in reserve. When the patient has been in the bath for about fifteen or twenty minutes, the bedclothes and plates should be removed, and *the patient instantly mopped all over very rapidly with a towel wrung out of cold water,* and then should be quickly rubbed dry.† Dry warm linen must be put on at once, and dry bedclothes must replace those which were on the bed previously. The

* Care must be taken not to put the bricks too near the body. I have known the thigh blistered in a patient who was unable to move away from the heat which was accidentally very near it. A dry napkin thrown over the wetted one will prevent this accident, if the bed is too narrow to allow sufficient space.

† The under sheet can be removed, and a dry one substituted by fastening the corners of the dry sheet to those of the damp one. Very little difficulty is generally met with in simply drawing the old sheet from under the patient, when the dry one follows it, and is left in its place.

patient generally experiences great and speedy relief from this bath. The exhausting acid sweats are materially diminished ; and the necessity for opium, as already mentioned, is almost at an end.

" But here the objection naturally presents itself : a patient in rheumatic fever suffers so severely from the slightest attempt to move him, that we are frequently obliged to leave him several days without changing his linen, from the pain occasioned by the attempt to remove it even leisurely ; and we have just been told to change it quickly, which implies that the case cannot be a very severe one, or this direction could not be carried out. The difficulty is really of the most trifling character, if the simple precaution is adopted of tearing the nightshirt open from top to bottom down the back. The sleeves are then slipped over the patient's arms almost without moving them ; and the torn edges of the linen are gently tucked under his sides, from which they can be just as easily withdrawn the next day. And by this means he is freed from the discomfort of lying day after day in linen soaked with acid perspiration ; and this is done without the smallest pain to himself or trouble to his nurse. For many years I used large lumps of quick lime, and wrapped them up in cloths soaked with cold water ; and, as soon as the lime began to slack, the patient was enveloped in a steam bath from simple water ; but in many places it is difficult to obtain quick lime, and the vinegar is also more refreshing to the patient ; so that the vinegar and hot bricks have now quite superseded the lime-bath.

" These, then, are the essentials of the treatment : quinine and iodide of potassium from the first, and the steam bath, with the subsequent cold sponging ; and, as an adjunct, opium in small doses, when necessary to procure sleep.

" It now remains to speak about the success of the treatment. During the fifteen years it has been in use, I have only had occasion to apply a blister over the heart in three instances ; and this was done because the patient complained of uneasiness in the chest, not because there was any distinct evidence of pericarditis. There has not been one case of distinct rheumatic affection of the heart ; but the absence of clinical reports puts it out of my power to state how many cases have been thus treated. I can merely say that they have been numerous.

Next, as regards the duration of the disease : it is extremely rare that it is necessary to give two steam-baths in bed, the patient being almost always able to have the second whilst sitting upon a chair ; from which you will draw your own conclusion as to the rapidity of improvement. I am surprised when the patient is not able to walk about the room, a little at any rate, in little more than a week ; and I have a strong impression that he is more frequently able to do this within the week than not. But, here, again, the absence of exact reports must be taken into account. I further think that from two to three weeks is the average duration of the ease before the patient is able to walk up and down stairs and to go out of doors for exercise or pleasure. Relapses are not common ; and the patient has not the lingering convalescence which I have observed under other methods of treatment.

"The steam-baths and subsequent cold douche should be continued after the patient is able to walk about, as they contribute to the healthy action of the skin, and promote the free mobility of the joints.*

"If there is great tenderness of any one particular joint, the opiate embrocation, containing in addition either chloroform or tincture of aeonite, should be gently painted over the part two or three times a day; but, in the early stage, the employment of friction appears unadvisable whilst the pain is very acute.

"The recommendations of the method now presented to you are: that the patient's strength is husbanded from the first, and he has neither the protracted disease nor the lingering convalescence often observed. Pain and sweating are more quickly relieved than by any other treatment I have seen. Relapses are very rare; and so far I have not seen any ease of cardiac affection occurring as a consequence of the rheumatism. I have a strong conviction that, if the method is fairly used in two or three cases, it will leave the same favourable impression upon the minds of those who try it that it has produced upon my own, and upon the students who have watched its employment in the hospital to which I have alluded."

ART. 16.—*Statistics of the Treatment of Rheumatic Fever.*

By Dr. T. KING CHAMBERS, Physician to St. Mary's Hospital, &c.

(*British Medical Journal*, August, 1863.)

In a short communication read at one of the recent meetings of the British Medical Association at Bristol, Dr. Chambers says:—

"Since May 1851, I have had under my care at St. Mary's Hospital 243 cases of rheumatic fever. Of these,

26 were treated with 5*j* of nitrate of potash three times a day;

174 with bicarbonate of potash; viz.,

141 with 3*j* or more every two hours;

33 with less quantities or less often;

32 (during the first year) in various other indeterminate ways;

* These baths are very easily given, by placing the patient naked upon a chair, and putting a can containing a couple of gallons of boiling water under it. Blankets are then to be folded round his neck, and made to surround him like a tent, reaching to the floor. In about five or ten minutes, a red hot brick should be put into the can, which renews the supply of steam. The patient soon perspires; and in fifteen or twenty minutes the blankets should be removed, and a couple of quarts of cold water should be poured over his shoulders; or, if he is afraid of such heroic treatment, he should be mopped from head to foot with towels wrung out of cold water. By this means he is invigorated instead of feeling weakened, and depressing perspirations do not follow the bath. The patient should sit upon a pillow or doubled blanket, on a close-bottomed chair, not upon an open cane-bottomed one. I have known a patient scalded by the accidental neglect of this precaution.

" To the last 11—that is, to all since May last—no special drugs have been given, only a little opium when the pain was very bad.

" No selection of cases was made.

" 1. Results on the duration of the Illness.

" Of those treated with nitrate of potash, the mean stay in hospital was	40·0 days
Of those treated with 3j bihoural doses of bicarbonate of potash	34·3 days
Of those treated with less quantity of the same	40·0 days
Of those treated without drugs	30·0 days

" If we exclude the last class, the number of which (11) is too small for statistical deductions, it would seem that, though smaller doses have no effect, yet that full doses of the bicarbonate of potash have some influence in shortening the duration of the illness, from the time of commencing it to that of the patient being sufficiently convalescent to leave the house with safety.

" I may remark here that any other measure of the duration of the disease is quite untrustworthy for statistical purposes. The different degrees of susceptibility to pain exhibited by different patients, the desire of some to extenuate, of others to exaggerate their sufferings, renders it impossible to register truly even the exact day when the pain ceases: whereas, in such a short period as they last after the commencement of treatment (viz., two or three days), the exact hour would require to be noted. It is equally impossible to decide when, or even whether, the swelling or redness is all gone. Those who have set clinical clerks to observe these facts, know how little the case books are to be relied upon.

" 2. Results on the Consequences of the Illness.

" In respect of their several preservative powers against the consequences of rheumatic fever, I find that—

" *Of the 26 treated with nitrate of potash*, there were attacked with inflammation of the heart while under treatment (carefully excluding all those admitted with it already existing) five, or 19·2 per cent.; four having pericarditis, and one endocarditis only. Four have died; two of inflammation of the heart, and two of sloughing back.

" *Of the 174 treated with bicarbonate of potash*, there were attacked with inflammation of the heart nine, or only 5·3 per cent.; and none have died.

" It would seem from this, at first sight, as if bicarbonate of potash had some preservative force. But the fact is, that nearly all of those treated by the alkaline method have been subjected also to what both rational physiology and the subjoined statistics seem to show has a much more powerful influence than any drug in keeping the heart from inflammation. I refer to blanketing the patients.

" Up to May 1855, no difference was made in the bedding of my patients with rheumatic fever from that of others in the ward: but after that date they were ordered to be enveloped in blankets, and

no linen was allowed to touch the skin. In nearly every case the orders were strictly obeyed.

"Of 63, either bedded in sheets, or who had wilfully thrown off their blankets, six contracted newly pericarditis at least, if not endocarditis as well; three had a relapse of pericarditis on old cardiac disease; one had endocarditis alone; nearly 16 per cent. had inflammation of the heart; and four died.

"Of 180 in blankets, none contracted pericarditis; none died; one had a relapse of pericarditis on old cardiac disease; five had endocarditis alone (in one of these cases of endocarditis it was brought on during convalescence by the patient being dowsed with cold water for an accidental hysterical fit); one a relapse of endocarditis on old cardiac disease.

"Not 4 per cent. have had inflammation of the heart. When it came, it was of a milder character, and was generally to be accounted for by some imprudent exposure. That is to say, that bedding in blankets reduces from sixteen to four, or by a good three-quarters, the risk run by patients in rheumatic fever."

ART. 17.—*Report of the Trial of Sarracenia Purpurea, or Pitcher Plant, in Small-pox.*

By Mr. J. F. MARSON, Surgeon to the Small-pox and Vaccination Hospital, London.

(*Lancet*, July 4, 1863.)

A communication, seemingly of great promise, from Mr. Chalmers Miles, of the Royal Artillery, was read some time since at a meeting of the Epidemiological Society on the use of sarracenia purpurea in small-pox. The specimens of the plant which accompanied the paper were submitted for trial at the Small-pox Hospital, the root being the part of the plant particularly recommended for use. Mr. Marson proceeds:—

"The root was said to be the part of the plant that, when made into a decoction, afforded the best form of giving the medicine. There was about enough for three persons only in the canister transmitted by Mr. Miles to this country from Nova Scotia, and given to me. I had therefore to make up my mind what were the most desirable cases of small-pox in which to test its efficacy. I fixed on, first, a malignant case—one of those attended with haemorrhage from the mucous surfaces; second, a severely confluent case, such as my experience has taught me usually dies, owing to the great amount of eruption; and third, if possible, a corymbose case, one of those rather rare and nearly always fatal cases of small-pox.

"To give the remedy a fair trial, it was necessary to have the case on which to try it in the early stage of the disease, during the first few days of eruption. There was but little small-pox in London at the time the plant was first submitted to me for trial, and, although I was on the watch for such cases as I have mentioned, several months elapsed before I had a suitable opportunity of trying the

efficacy of the alleged remedy. Of course I wished to meet with the cases I had fixed on free from any suspicion of their having been vaccinated. This was absolutely necessary, because vaccination has a great influence in modifying what may be called the normal course of small-pox. After several disappointments, unnecessary further to detail, small-pox became epidemic in the autumn of last year, and the opportunities of trying the sarracenia became numerous. About the same time Mr. Miles returned to this country, and he was good enough to write to me and place at my disposal any amount of the sarracenia I might require, to be forwarded through the agency of Messrs. Savory and Moore.

"I tried the decoction of sarracenia made from the root, by simmering an ounce in a pint and a half of water for four hours, until reduced to a pint; and a quarter part was usually given for a dose twice a day, for two days or more. I also gave, in some cases, the liquor sarraceniae supplied by the same firm. In all fifteen patients have been treated with the sarracenia, selected for their severity, as I have described—such cases as I believed would not get well under ordinary treatment. They have all died.

"The cases were selected on admission in the early stage of the disease on account of the severe symptoms manifested, and because I felt it was of no use to try the efficacy of the sarracenia on mild cases or vaccinated cases, which I knew very well would recover without anything being done for them beyond the exhibition of ordinary care, the giving of salines if required, occasional aperients, suitable diet, &c.

"I cannot say that the sarracenia had any effect whatever. It did not save life; it did not modify in the least the eruption of small-pox; it did not influence any of the secretions; it did not increase the secretion of urine; in only one instance did it seem to act on the bowels, and this seeming effect might easily have been from other causes. The particulars of the fifteen cases taken daily at the time of the trial of the sarracenia are appended to the report.

"Two cases have been admitted into the hospital that had taken a decoction of the leaves and stems of the sarracenia before admission. The first, a very mild case, having four vaccine cicatrices, was highly modified, I believe, by the vaccination. The second case was confluent, was without vaccination, not severely confluent, and was wholly unmodified. They both recovered. The recovery, might, perhaps, by some be attributed to the sarracenia, but I believe it had nothing to do with it. The vaccinated case was, as I have said, very mild—due, I believe, to the vaccination. As to the second case, about half our confluent unvaccinated cases recover with ordinary treatment.

"In conclusion, I may state that had I found the sarracenia do any good, I should have taken an earlier opportunity of reporting the fact to the profession. As it failed, I thought it well to defer this report, that others might, without bias, try the plant during the present epidemic of small-pox, and favour us with their opinion of its reputed power of controlling the course of the disease in its severe forms."

Cases of Small-pox treated with Sarracenia (1862).

1. Margaret C——, 18 years of age ; small-pox, confluent, with menorrhagia ; unvaccinated. Was admitted into the Small-pox Hospital, October 8, 1862 ; fourth day of illness, second of eruption. Took a quarter of a pint of the decoction of sarracenia at one o'clock at night, October 8th, and a quarter of a pint, in two doses, the following day. She would not afterwards take any more, and died Oct. 12th.

2. Mary Ann B——, 11 years ; small-pox, malignant ; unvaccinated. Admitted Oct. 22nd ; fourth day of illness, second of eruption. Took two ounces of the decoction of sarracenia, made from that sent by Messrs. Butler and McCulloch, every six hours, until the pint was consumed, beginning on the day of admission. Died Oct. 25th, in the evening, seventh day of illness, fifth of eruption.

3. John M——, 11 years ; small-pox, confluent ; unvaccinated. Admitted Oct. 22nd ; fifth day of illness, second of eruption. Took the same evening two ounces of the decoction of sarracenia (Butler and McCulloch), and continued it every six hours until the pint was consumed. Died Oct. 28th, eleventh day of illness, eighth of eruption.

4. Elias H. F——, 48 years, a machinist from Massachusetts ; small-pox, confluent ; unvaccinated. Admitted Nov. 6th ; eighth day of illness, fifth of eruption. Took the decoction of sarracenia, that sent by Mr. Miles, in quarter-pint doses, beginning the day of admission, twice the following day, and one dose the succeeding day. Died Nov. 13th, fifteenth day of illness, and twelfth of eruption.

5. John H——, 18 years, baker ; small-pox, confluent ; unvaccinated. Admitted Nov. 18th ; fifth day of illness, second of eruption. Began the decoction of sarracenia the following day ; took two quarter-pints one day, and two quarter-pints the following day. Died Nov. 25th, twelfth day of illness, ninth of eruption.

6. George D——, 25 years, labourer ; small-pox, confluent ; unvaccinated. Admitted Dec. 2nd ; fifth day of illness, third of eruption. Began the decoction of sarracenia same day ; took one quarter-pint dose, two doses the following day, and one the next. Died Dec. 10th, thirteenth day of illness, eleventh of eruption.

7. William B——, 17, baker ; small-pox, confluent ; unvaccinated. Admitted Dec. 3rd ; fifth day of illness, second of eruption. Began the decoction of sarracenia next day ; took two quarter-pint doses, and the remainder the following day. Died Dec. 20th, twenty-second day of illness, and nineteen of eruption.

8. Charles B——, aged 19, footman ; small-pox, confluent ; unvaccinated. Admitted Dec. 11th ; fourth day of illness, second of eruption. Began the decoction of sarracenia Dec. 12th, and took the pint on that and following day ; continued it through another pint, and died on Dec. 21st, fourteenth day of illness, and twelfth of eruption.

9. John J——, aged 25, draper's assistant ; small-pox, confluent ; vaccinated in South Wales in infancy ; no cicatrix. Admitted Dec. 11th ; seventh day of illness, fifth of eruption. Began the decoction of sarracenia the following day ; took the pint during the two days, Dec. 12th and 13th, and continued it through another pint. Died Dec. 15th, eleventh day of illness, ninth of eruption.

10. John Z——, aged 33, confectioner ; small-pox, confluent ; vaccinated near Como ; one indifferent cicatrix. Admitted Dec. 11th, second day of eruption. Began the decoction of sarracenia Dec. 14th, and continued it to a double dose, two pints. Died Dec. 18th, eleventh day of illness, ninth of eruption.

11. James H—, aged 21, labourer; small-pox, confluent; unvaccinated. Admitted Dec. 19th; sixth day of illness, fourth of eruption. Began decoction of sarracenia same day. Died Dec. 28th, fifteenth day of illness, thirteenth of eruption.

12. Thos. U. J—, aged 22, draper's assistant; small-pox, confluent; unvaccinated (cut twice for cow-pox in Essex without effect). Admitted Jan. 19th, 1863; eighth day of illness, sixth of eruption. Began on the day of admission, one drachm of liquor sarracenæ every four or five hours—one drachm being stated to be a full dose; took three bottles, in all an ounce and a half, of the liquor sarracenæ; no effect. Died Jan. 24th; thirteenth day of illness, eleventh of eruption.

13. Ann O—, aged 30, barmaid; small-pox, confluent, haemorrhagic; vaccinated at Lymington, two indifferent cicatrices. Admitted Jan. 24th; fifth day of illness, third of eruption. Began the following day with one drachm of liquor sarracenæ every four or five hours; took an ounce and a half of the liquor; no effect. Died Jan. 28th, being the ninth day of illness, and seventh of eruption.

14. Thos. C—, aged 35, stone sawyer; small-pox, confluent; unvaccinated. Admitted Jan. 31st, 1863; eighth day of illness, sixth of eruption. Began with the liquor sarracenæ on the day of admission; one drachm for a dose every five or six hours; took six drachms. Died Feb. 5th.

15. James U—, aged 39, labourer; small-pox, confluent; unvaccinated. Admitted Jan. 31st; sixth day of illness, fourth of eruption. Began liquor sarracenæ same day; took six drachms. Died Feb. 5th.

ART. 18.—*Are Scarlet Fever and Measles Distinct Diseases?*

By Dr. WILKS, Assistant Physician to Guy's Hospital, and Physician to the Royal Infirmary for Children.

(*Medical Times and Gazette*, Jan. 31, 1863.)

In some clinical notes on Scarlet Fever, delivered not long ago at the Royal Infirmary for Children, Dr. Wilks says, enforcing what he says by the narration of certain cases:—

"At one period in medical history the two affections were confounded, but since that time a very broad line of distinction has always been made between them, and, as a rule, no difficulty exists in their separation. Every medical man must, however, at times have been puzzled in his attempt to declare to which exanthem the particular case belonged; the difficulty arising from the apparent mixture of the two diseases, rather than from the mere mildness of the case, although this constitutes a difficulty of another kind; for those who have witnessed an exanthem in a public school must know how differently children are affected, and how, in several cases, unless from a knowledge of the existence of the disease in the institution, they would scarcely have recognised the true character of the affection.

"We now allude rather to cases where the patient is very ill, and the symptoms well marked, but partaking of characters belonging to both scarlatina and measles, so that it is with difficulty a decision can be arrived at concerning the true nature of the illness. A question, therefore, has often arisen whether Sydenham did right

in drawing so distinct a line between the two affections—whether, indeed, they be not modifications of one another, or whether they may not be often combined. Some have thought, and such theory is held by many German writers, that the disease which constitutes the difficulty, and which is apparently made up of scarlatina and measles, is, in fact, a third affection of an altogether distinct character, and that three exanthemata should be recognised—scarlatina, morbilli or measles, and rubeola, the latter being the name given to the affection of which we are now speaking.

"The method to be taken in forming a conclusion would be probably of the same kind as that adopted with respect to the controverted theory of the distinctions of continued fevers—that if belonging to the same species one would propagate the other, and the two would be found associated; but if belonging to different species, each would produce its like, and very distinctive characters would be preserved to them. So if it be found that the exanthemata of which we are speaking are found variously intermixed, occurring in all forms in the same localities or the same houses, it would be a strong argument in favour of their identity. If, on the other hand, they are found distinct, it would be almost a proof that they had a nature *sui generis*; and this, we think, will be found to be the case with respect to these diseases. Measles or morbilli is one form of disease, and scarlatina another; whereas in all probability, the rubeola is a third affection, distinct from both, and thus explaining the difficulty arising from the apparent combination of the two, and explaining also the fact of the re-occurrence of measles or scarlatina.

"Dr. Copeland states that some authors believe rubeola to be a specific contagious disease. Some consider it a variety of one or other of the diseases which it so closely resembles—of either measles or scarlatina. Some consider it a variety of scarlatina, others allied to measles, and others that there is no essential difference between measles, scarlatina, and rubeola. According to this, rubeola should be regarded as the connecting link between measles and scarlatina: and Dr. Copeland himself rather thinks that it is a combination of both, and not a disease *sui generis*.

"The disease of which we speak may be characterised, in short, as an affection having the eruption of measles, with the throat of scarlatina. Our own attention was drawn to the subject many years ago, when attached to the Surrey Dispensary, and a difficulty occurred to us long before we knew that any similar trouble had been met with by others; as for example, on visiting a child, and finding its skin covered with a measly rash, and, at the same time, a cough existing, with wheezing, coryza, and the general aspect of measles, we were just on the point of pronouncing the case to be measles, when the neck was observed to be swollen, and, on looking at the throat, it was seen to be injected, and the soft palate tumid, as in scarlatina. Always having been in the habit of regarding the throat affection as the most important feature of such a case, we changed our diagnosis to one of scarlatina, but then were rather annoyed to hear that the child had already had this latter disease, which was

described in such an unmistakable way that there could be no doubt of the fact. The same difficulty has since often occurred; also the statement that children have had measles and scarlatina twice: as well as the announcement which one is obliged constantly to hear, of one disease rapidly following the other, as only lately, where we were told of the case of a child who was said to have had scarlatina before the rash of measles had entirely disappeared,—a most unlikely circumstance.

"At the Infirmary for Children, our experience being gained mostly from the out-patients, an opportunity for seeing the diseases at their height is not so great as for witnessing its effects or the sequelæ; but in these we can every day see that the subject of which we speak requires further elucidation; for example, in the following cases:—

CASE 1.—A child, 2 years old, was brought to the Infirmary with discharge from the ears, and enlarged glands in the neck. On making inquiries as to scarlatina, the mother stated that, four weeks before, the child had a fever, but which the doctor said was measles. Was it not rather this third disorder, the apparent combination of the two, or rubeola?

CASE 2.—A child, 8 years old, came to the Infirmary with renal dropsy; the mother said that a month before she was covered with a rash, like that of measles, and she had a cough; but, at the same time, the neck was much swollen, and the throat was sore. Soon afterwards the skin desquamated. Was this merely a mistaken diagnosis, or was it a case of rubeola?

CASE 3.—A boy, aged 5, was brought to the Infirmary, with large suppurating glands in the neck, just as seen after scarlet fever. On making inquiries as to the occurrence of this disease, the mother said that a month before the child had what was called measles. There was a cough, and a running from the nose and eyes. The mother said that the child had had measles before, and this was the second attack.

CASE 4.—A girl, aged 5. Nine days before she was taken with a cough and cold, followed by rash, which both the Doctor and the mother considered to be measles. In a day or two there was great swelling of the throat. When she appeared at the Infirmary, there was no desquamation of the skin; but the neck was very much swollen, just as after scarlet fever, and there was some bronchitis, and in a few days there was discharge from the left ear. The case showed an apparent combination of the two. Was it not rather an instance of a third disease?

CASE 5.—A girl, aged 4, came to the Infirmary very ill, wasted, skin harsh, mouth aphthous, and lymphatic glands in neck much enlarged. There was ulceration of the gums of the lower jaw, and a portion of the alveolar process was exposed. This was subsequently removed, and the two incisors of the lower jaw fell out. The whole history suggested scarlet fever, but the mother said that the child had had measles three weeks before, and that one child in the house had died of it.

"Although most medical men would consider it an insult to suppose that they were unable to recognise a case of scarlatina or measles, yet the relationship of these two diseases remains in such obscurity, that we would suggest that some unprejudiced person, with a large field of experience, should commence the study of the exanthemata in children *de novo*."

ART. 19.—*Dr. Jenner on Impediments to Successful Vaccination.*

By Dr. ——.

(*Lancet*, October 31, 1863.)

Just at this time, while the question of vaccination and its impediments and the duration of its protective power are of the highest interest, and ought if possible to be settled by exact observation, the statistical results of Vaccination and Revaccination in the Army just issued in Dr. Balfour's report have considerable value. They afford information supplementary to that obtained in the course of the recent Privy Council inquiry. During the year 1861, in an average force of 88,955 men, there were fifty-one cases of small-pox reported, of which four were fatal. They are all stated to have occurred in men bearing marks of vaccination. The following table shows the results of vaccination during the year in those respectively who bore marks of previous small-pox, who bore good marks of previous vaccination, who bore doubtful marks, or bore none at all:—

Class.	Number.	Results.	In those who bore marks of previous Small-pox.	In those who bore good marks of previous Vaccination.	In those who bore doubtful marks of previous Vaccination.	In those who bore no marks of previous Vaccination or Small-pox.	Total.
Soldiers, not Recruits	2053	A perfect vaccine pustule	451·4	484·6	236·8	326·	430·6
		A modified ditto	159·6	157·4	505·3	277·5	218·7
		A failure in	389·	358·	237·9	396·5	350·7
		Total	1000·	1000·	1000·	1000·	1000·
Recruits	4395	A perfect vaccine pustule	345·5	407·3	461·3	527·3	415·5
		A modified ditto	266·8	240·8	301·3	202·6	242·5
		A failure in	387·7	351·9	237·4	270·1	342·
		Total	1000·	1000·	1000·	1000·	1000·

In connexion with these figures, which suggest some singular doubts as to vaccination and vaccinators, we insert the following unpublished letter by Jenner, the illustrious author of vaccination, on the impediments to its successful practice. Very few persons have seen the letter, and it is certainly of curious interest:—

"Berkeley, Dec. 4th, 1817.

"Sir,—I was absent from home when your obliging letter of the 24th of November arrived; but I do not think that this is likely to occur again for some time, and shall, therefore, be very happy to take your little family under my care at the time you mention—the latter end of January.

"Our arrangements must be carefully made, as the children must be met here by proper subjects for transferring the vaccine lymph; for on the accuracy of this part of the process much depends. It may be necessary to observe also, that amongst the greatest impediments to vaccination (*indeed the greatest*) is an eruptive state of the skin on the child intended to receive the infection.

"On this subject I wrote a paper so long ago as 1804,* and took much pains to circulate it; but I am sorry to say that the attention that has been paid to it by the Faculty in general has been by no means equal to its importance. This is a rock on which vaccination has been often wrecked; but there is *no excuse*, as it was so clearly laid down in the chart.

"I am, Sir, your obedient and very humble servant,

"EDW. JENNER.

"To W. J. Denby, Esq., St. James's-square, London."

We are indebted for this interesting document to Dr. Diamond, of Twickenham House, whose erudition and literary tastes are well known.

ART. 20.—*A Fatal Case of Varicella.*

By DR. FREDERICK J. BROWN, of Rochester.

(*British Medical Journal*, Oct. 17, 1863.)

CASE.—William D. H.—, aged $3\frac{3}{4}$ years, was first seen by me on August 30th, 1862. He had been ill about five days with chicken-pox. The vesicles were desiccating; but there were two apertures in the skin of the back, as if portions had been punched out, resembling the perforating ulcer of the stomach. One aperture was equal in size to a groat; the other was rather smaller. There was induration and livid redness of the skin of the back, in a diffuse form, constituting erysipelas. The child was suffering from irritative fever. I ascertained that the urine was passed in bed, because the child dreaded to be lifted out. The course of the erysipelas was to affect the whole of the abdominal wall. Peritoneal effusion took place, with diarrhoea; and the child died on September 10th.

The death-certificate was as follows:—Varicella, 17 days; erysipelas, 12 days; peritonitis, 4 days.

The treatment consisted of the application of nitrate of silver dissolved in sweet spirits of nitre (gr. v to 3 j) to the erysipelatous skin, and of zinc ointment to the ulcerated apertures. Quinine was administered internally. Very little nourishment was taken by the child, although beef-tea and wine were ordered.

I have brought this case forward, because it is the only fatal case of varicella that I have ever seen. I once saw an ulcer in the abdominal wall

* This paper was published in the *Medical and Physical Journal* for August, 1804.

equal in size to a halfpenny, in a quadroon child ; but it was not a punched-out ulcer. That child recovered.

In the case under consideration, it is probable that the wetting of the skin by urine may have determined the fatal event.

I do not know whether perforating ulcers have been ever observed before, either as an occasional occurrence in the scabbing stage of varicella, or as an event in the course of low forms of erysipelas. It was not a case of ordinary sloughing. There was no appearance of gangrene.

The sanitary condition of the house was bad. The privy was close to the house, and waste water was permitted to run into the privy, so causing agitation and dilution of the night-soil, from which evaporation would be constantly going on. The child occupied the basement story, and was lying within a few yards of the privy. Another child was suffering from deep ulceration of the gum and cheek ; and a week or two after the death of the child whose case has been narrated, there were two children ill with swelling of the glands below the ear, accompanied by pallid countenance and feverishness. These circumstances are evidence of defective sanitary condition, and show that the family was suffering from blood-poisoning.

ART. 21.—*On the Treatment of Malarious Fever by the Subcutaneous Injection of Quinine.*

By Mr. W. J. MOORE, Bombay Medical Service.

(*Lancet*, August 1, 1863.)

In a short article on this subject, Mr. Moore says :—

"I have employed this mode of treatment in upwards of thirty cases of intermittent fever, and in several cases of remittent, and with almost invariable success, the former class seldom requiring a second application, the latter generally subsiding after the fifth or sixth injection. Since the period I commenced to use quinine in this manner I have been surprised and pleased to find in one of the medical periodicals that the same plan has been pursued by Dr. Chasseaud, of Smyrna, who reports 150 cures, and especially recommends the system in fever complicated with gastric symptoms, when the exhibition of quinine by the mouth is often 'inefficient, difficult, and hazardous.'

"I use the strongest solution of quinine which can be prepared—viz., thirty grains of quinine, eight or ten drops of dilute sulphuric acid, and half an ounce of water. Of this I inject from half a drachm to a drachm, the former quantity containing some four grains of the active agent. With the exception of a little sulphate of soda if the bowels are confined, I use no other remedies whatever in uncomplicated cases of any type of malarious fever. When the spleen is enlarged, or if a leucocytemic condition is present, I prescribe, as an additional curative agent, one or other of the preparations of iron—very frequently the citrate of iron and quinine.

"I generally inject beneath the skin over the outer belly of the triceps extensor muscle, and sometimes over the deltoid. I have, however, used the syringe with equal effect on the thigh and calf, and in cases of enlarged spleen have thought the action of the remedy increased by injecting over that organ. I use a small glass syringe

with the screw action, and furnished with a sharp silver point some half an inch in length. The latter is introduced beneath the integument half an inch or less, and the pain is not greater than the prick of a pin. Indeed, patients have frequently declared they would rather submit to this process than taste the bitter of quinine. I have never seen the slightest inflammation or irritation follow the operation, except in two instances. In one of these this result was due to the instruments employed—namely, a small trocar and common glass syringe; in the other, to quinine in suspension being used instead of in solution. Indeed, I have reason to think that quinine in suspension is very irritating to the tissues, and this is what physiology would lead us to expect, as it is certain that when a fluid material is introduced into the areolar structure, it will be absorbed more directly than any solid mass could be. Therefore, to avoid irritation of the parts, and also to prevent 'choking' of the syringe (and which instrument was procured from England), I insist upon a perfectly clear solution of the alkaloid.

"The best time to inject is shortly before the expected cold fit, but it may be done during the first stage with the effect of lessening and sometimes stopping the whole paroxysm. Latterly, when a patient presents at the morning visit, who expects an accession during the day, I have injected at the time, and nearly invariably the fever has stopped.

"In cases of remittent I have endeavoured to inject during the remission, but do not wait for this period. In severe cases the injection should be repeated at intervals of six or eight hours.

"I believe four or five grains of quinine injected beneath the integument are equal in their effects to five or six times that amount taken in the stomach; also, that the effects are more certain than when taken in the ordinary method; also, that relapsing attacks are less common than when the remedy is administered by the mouth."

ART. 22.—*On the Fevers of the South-East Coast of Africa.*
By Mr. CHARLES J. MELLOR, Medical Officer of Dr. Livingstone's
Exploring Party.

(*British Medical Journal*, October 25, 1862.)

The fever of the Zambesi, as found by Dr. Livingstone in 1858, was described as of the sthenic intermittent kind. That, however, of the last year has rarely assumed this character, being generally of the asthenic remittent type; when intermittent, being only so for a short time, and always resolving into remittent. As it was first observed in 1858, the paroxysm was sudden; there were few premonitory indications; the patient had chills and rigors, with headache, pain in the temples, and aching of the loins. In the hot stage, there was complete stoppage of secretions; the headache became more and more severe; occasionally there was delirium. The tongue did not always change with the progress of symptoms: it might remain healthy-looking through this stage. It was when

these symptoms are established that the Livingstone specific must be given, if the first stage had been allowed to pass without its administration. The composition of this powder is the following : Rhubarb, gr. x ; resinous extract of jalap, gr. viij ; calomel, gr. iv ; quinine, gr. iv. This quantity used to be given in five pills, with the view to relieve the *primeæ viae* quickly. Quinine was given about an hour after the pills, and continued every two or three hours, in five or ten-grain doses, to cinchonism. The greater the deafness produced, the greater was the assurance of speedy restoration.

Generally the force of the attack was spent by the full action of the pills ; and it was not uncommon for the patient to resume his occupation on the third day after that of the attack. The exceptional cases were those in which the fever had been brought on by exposure to wet or sun, and the treatment had been delayed ; or in which obstinate vomiting was present. Quinine was continued in five-grain doses until perfect restoration was secured, when the ordinary three-grain dose, taken with coffee early in the morning, was resumed. The attacks were sharp, but short, quickly gave way to treatment, and left the patient apparently none the worse.

In the past year, however, the fever has taken a less active form ; the symptoms have been less decided ; the stages ill-defined, or none ; and treatment less efficacious. So irregular have the symptoms been, that the sthenic class is now the least often found ; very rarely is the intermittent form met, and, when purely so at the onset, it soon becomes remittent. The symptoms may be classed, according to their regularity and force, under three heads : 1. Those of the sthenic form of fever, in which they are most highly developed and defined ; 2. Those of the asthenic form, where no order is followed—a prolonged cold or hot stage, or absence of one stage altogether, ending in great exhaustion, relieved only when full perspiration is procured ; 3. The ephemeral—a mild form of the sthenic, in natural sequence, and lasting but a short time without any complication. The sthenic form is that generally met with in first attacks, and answers to that described by Dr. Livingstone in his letter to Sir James Clark in 1859 ; but the treatment has not been so successful in producing rapid cures. The purgative "specific" has had to be repeated frequently before relief came ; and when this has been necessary, and time been lost, the cure has been by so much delayed ; so that, in place of three days, we must say seven, as the average time of each patient on the sick-list. Headache has always been the last symptom to leave ; and, so long as it has lasted, large doses of quinine have been continued.

But when the patient has had frequent attacks, the stages become less marked, and the symptoms less amenable to treatment. The premonitory symptoms are ill-defined. The fever may be ushered in by the patient feeling chilly, or as though currents of cold air were passing over the spine ; or there may be a distinct rigor. This state may be continued for twenty-four hours, or alternate for that or a longer time with headache and heat of skin. There may be no cold stage at all, or no hot stage ; or the paroxysm may consist only of alternations of the two ; the headache, pains in the loins, and

languor, meanwhile increasing. There may be vomiting from the outset ; when this occurs, the case is always tedious. Or the cold stage may be so prolonged that reaction is with difficulty induced. The tongue may be foul, or clean throughout ; but relief will not be afforded until the secretions are restored healthily, and free perspiration procured. The symptoms may be so few and undeveloped that they are scarcely noticeable ; and a man who has had fever frequently will only be able to appreciate them for what they prognosticate. If left alone, they recur again and again, gradually prostrating the patient, and ultimately merging into the remittent form when they have almost exhausted the strength of the victim. It is in the insidious progress of these symptoms that the opportunity is lost of treating actively. The first symptoms may be merely giddiness, and a feeling of languor, not calling for more than a stimulant. If they recur, the same remedy is used with quinine. But, though relieved, the patients are not cured ; they become jaundiced gradually, and sickly-looking ; and now the tongue for the first time may become foul, though, unless there be other evidence of hepatic derangement, it is as often clean and pale throughout. And now, when the system has already become debilitated, the difficulty arises in the treatment, as the means taken to relieve the liver, whether mild or active, cannot be depended upon to relieve the system thoroughly, as in the sthenic type of the disease. The liver may be relieved ; but generally relief is not obtained, and the prostration becomes greater the oftener this form of medicine is administered. It is generally in this condition that vomiting sets in, frustrating every attempt to push in sustenance or medicine.

The oftener a patient suffers in this way, the more spurious and irregular is the process of the fever. The intervals of attacks never permit him to resume work long ; headache and giddiness, loss of appetite and sleep, keep him constantly ailing. He seems to be only cured so long as he is under the full influence of quinine. Large doses have been given to patients suffering in this way—ten or twenty grains every day, so long as the slightest indication of the approach of an attack existed, or the symptoms from the last one had not entirely disappeared. But, though lessening the severity, they have never warded off an attack, nor lengthened the intervals between the paroxysms.

It is not unfrequent that after sthenic fever, a patient may, after regaining health, suddenly lose appetite and sleep, and have prickling sensations through the skin, with constipation or diarrhoea. These, if allowed to take their course, or if only treated individually, resolve into periodical returns, and, progressing in development, assume the remittent form. In treating each symptom as it arises (when pointing to functional disorder in any organ) specifically, antiperiodic doses of quinine are given ; and, should this combination of treatment prove ineffectual, it has been found best to treat for the removal of vitiated secretion, and restoration of healthy action in the liver and any other organ affected ; following with quinine to cinchonism, and continuing its use in large doses almost to cinchonism until every symptom shall have disappeared. As a rule, this treatment is

sufficient; but when a patient falls into this form of fever, he is in a low condition of health, pale, and dyspeptic. Vomiting may set in at any time, and, if it be long continued, will delay the cure; for until the remedies can be retained, and the secretions restored in healthy form, no permanent relief can be expected. Generally, when vomiting is severe, there is jaundice, sometimes with pain over the hepatic region. So soon as medicines can be retained, a large dose of calomel and jalap is given. In addition to large bilious evacuations by stool, the urine is frequently found deeply tinged by bile.

The same complications may occur in the process of the sthenic form. The liver, though relieved at first, may suffer blockade a second time; jaundice may be universal in a few hours, with tenderness over the liver; or there may be complete arrest of the secretion: and, when this amounts to suppression, the circulation becomes clogged; the heart's action is troubled, and frequently a mitral *bruit* is heard; and there is a feeling of weight at the praecordia. As the functions of the liver and emunctories are restored, the heart's action becomes more natural; but *bruits* have remained until the strength and flesh have been made good. In two cases, an anaemic condition remained after treatment had reproduced healthy action of the liver and kidneys. If a loud *bruit de diable* was heard along the course of each jugular, as well as a loud mitral murmur, both gradually disappeared as health and strength returned.

In the asthenic variety, a murmur has commenced with the earliest symptoms, and has progressed and faded away with them. Indistinct at first at the heart's apex, it has grown more defined, being accompanied when loudest with a *bruit* along the jugulars; and it has died away as it commenced. But, in its progress, the heart's action is troubled; the patient feels oppression and distress in the region of the heart; he cannot sleep from the continuance of these sensations, and finds it difficult to lie on either side with comfort when there is *bruit de diable* along both jugulars. The cause of this may be found in the anaemic state into which patients rapidly fall after long-continued spurious fever, or after long-continued sthenie, in which the treatment has been active, and heroic doses (twenty grains of the specific, repeated three or four times in the course of twenty-four hours) have been used. Corroborative of this view, we find frequently oedema of the lower extremities, without any indication of renal disorder, blanched skin, small weak pulse, and tendency to syncope.

After many attacks, the spleen frequently suffers. Attention is first directed to it by pain and tension beneath the ribs, simulating, from its suddenness and acuteness, pleuritic affection. Percussion and auscultation will soon define the limits of the enlargement, as the spleen presses forward immediately against the cartilages of the lowest ribs, and the anterior edge forms a distinct prominence.

As sequelæ, may be mentioned intractable diarrhoea; headache, general, or hemicranial, or over the brow; vertigo; and, in the asthenic, œdema of the legs. Ulcers form from the smallest abrasion, and will not heal until the general tone be improved.

There is a modification of the symptoms of this fever: it is simply the mildest form of all the stages in natural sequence. It does not require the active treatment of the sthenic, but it must be at once combated with the usual means in smaller doses; and quinine must be continued to cinchonism. If neglected, it will recur as intermittent; soon, however, becoming remittent. Those who have been longest resident in the country have these slight attacks. The strength is very slightly affected by them. The treatment is based on the principle that the *primeæ viæ* must be relieved and healthy secretion restored before any permanent good can be effected. With this view, the composition of jalap, calomel, and rhubarb, is given at the outset, and repeated again and again, until the secretions are fully relieved, and restored to healthy characters. In obstinate cases, other drastic purgatives are combined, until thorough purgation has been effected. Recovery is tedious and protracted in proportion as this object is quickly or tardily achieved.

But in asthenic cases, where the stages are irregular, and where there is often difficulty in inducing reaction after a fitful, long-continued cold stage, the purgative is given in smaller doses with a stimulant; and (if there be no vomiting) reliance is placed in producing as quickly as possible the full influence of quinine.

Complications of vomiting, headache, pains in the renal region, loss of rest with extreme restlessness, are treated by ordinary means. A full dose of morphia given after purgation, often relieves all these symptoms and induces sleep, from which the patient awakes almost restored to health.

ART. 23.—*On the Use of the Sulphites in Diphtheria.*

By Mr. JOHN LYALL, Newburgh, Fifeshire.

(*British Medical Journal*, January 31, 1863.)

Mr. Lyall writes a short note to recommend the employment of these remedies in this case; and he thinks that the result is calculated to confirm the sanguine expectations of Dr. Polli as to their power as disinfectants and antiferments. Diphtheria, he tells us, was prevalent in his neighbourhood, and ordinary means, local and general, had proved to be very unsatisfactory. Then he proceeds:—

“After a time, I began to use sulphite of soda in half-drachm doses every six hours, or every four hours where the case seemed more urgent. As the improvement following the use of this remedy has been apparently very marked, I have written this brief note in order that its value may be tested where diphtheria at present prevails. The prescription I have been using is the following: sulphite of soda, ʒss; water, ʒiv. A tablespoonful (ʒss) to be taken every four or six hours.”

ART. 24.—*Case of Malignant Pustule.*

By Dr. JAMES EDMUNDS.

(Medical Times and Gazette, January 31, 1863.)

A fine, tall, bulky man, fifty years of age, who had led an active business life, lived freely, and suffered from gout, and from symptoms which had been referred to disease of the muscular texture of the heart, was occupied on the 16th of last December in superintending the construction of a conservatory in his grounds at Hackney, and at 10 P.M. he took supper, and went to bed "as well as possible."

At midnight, he was seized with a rigor, and with severe pain across the lower part of the loins and through the hips. At 3 A.M. he found his "tongue greatly swollen," and his articulation very difficult; he became rapidly worse, and, early in the morning, sent for me, but I was unable to visit him directly.

At 11 A.M. I found him in bed, with a countenance indicating considerable distress and profound toxæmia. The mouth was open, the saliva was running over the lower lip, and the tongue was thrust upwards by a remarkable swelling in the sublingual space; there was the greatest difficulty in utterance, but no huskiness of the voice; the pulse was weak, and he was very feeble when out of bed. Only the under part of the tongue was visible, but, by means of a tablespoon, I managed to see that the roof of the mouth, the palate, and the pharynx were unchanged in appearance, as also were the lips, the cheeks, the gums, and the tongue itself. The tongue had a "dried-beef" look about the tip of its upper surface, and, with the swelling beneath, looked as if it were mounted upon a small thick muffin, about as big as itself, and of the colour of the mouth. The swelling was symmetrical, and it completely filled that space within the lower jaw which is usually occupied by the tongue. The mucous covering was not obviously altered, but close inspection discovered an indistinct pallid mottling, analogous to that change of surface which precedes ordinary gangrene. Upon applying a finger the mass was not very sensitive; it was soft and yielding, as if it might contain pus infiltrated through its texture, but it was not quaggy, it did not pit, and it was utterly destitute of that brawny feel which attends ordinary carbuncular inflammation. Beneath the lower jaw there was some swelling and considerable tenderness.

I could scarcely believe that the patient had arrived at this condition in less than twelve hours; but he emphatically assured me that he "went to bed as well as I was."

Ten years' active practice had not previously presented a similar case to my observation; and beyond considering it as gangrenous cellulitis, I was at a loss for a designation; and beyond the risky procedure of making a free incision beneath the tongue, I was also at a loss for any effectual treatment.

I explained the nature of the case to the patient and family, and particularly guarded the latter against infection. I directed the patient to wash out the mouth frequently with a solution of nitro-muriatic acid, and to take a full dose of carbonate of ammonia immediately; and it was arranged by telegram for Dr. B. W. Richardson to meet me in consultation at two o'clock. At this visit the patient looked worse, and the submaxillary swelling and tenderness were greater, although the mouth and the utterance were about the same, and there was neither affection of the pharynx nor huskiness of the voice. The only clue which we could obtain as to the origin of the malady was the fact that, three or four days before, the patient had eaten some

jugged hare which was "high," and that beneath the tongue a ragged tooth in the lower jaw had produced a sore, through which a putrid infection might have occurred, and near to which he remembered that some of the meat had lodged until the next day. We decided that, at all hazard, a free incision must be made into the mass; and Dr. Richardson further suggested that some solution of iodine should be inserted into the incision on pledgets of lint, so as to permeate the diseased textures, and, if possible, prevent, by chemical action, any further blood-poisoning. Our recommendations were at once acquiesced in, and a long bistoury was plunged by the side of the frenum linguae downwards and backwards into the mass for an inch and a-half, when its point was turned outwards so as to emerge upon the end of the finger beneath the root of the tongue, and the knife was drawn forwards so as to cut its way out, and produce a most effectual incision. No bleeding ensued, and a corresponding incision was instantly made under the other side of the tongue. The mass did not cut like ordinary flesh, nor in the least like carbuncle, but like soft flesh, or ripe Stilton cheese; no pus exuded; and the cut surface presented a mottled pale and pinkish appearance. Pieces of lint soaked in a solution of compound tincture of iodine diluted with three parts of water, were thrust into the opening, and were to be changed every hour; the surface of the mass and the contiguous parts were also to be frequently swabbed with the solution by means of a small sash-brush. The room contained a good fire, and the windows were thrown open. Some fragments of iodine also were placed about the room to exhale into vapour, and, as Dr. Richardson thought, to produce an ozonising, and, perhaps, disinfecting effect upon the atmosphere. The patient was to take large doses of carbonate of ammonia, and champagne *ad libitum*.

At 10 P.M. Dr. Richardson and myself held another consultation. The patient's countenance was much improved, and he said he felt better. Articulation was easier, the tongue more movable, and the incisions were discharging copiously. There was no huskiness of voice nor affection of the pharynx, and the pulse was better. We congratulated ourselves and the family upon the possibility of recovery, as, notwithstanding the wonderfully rapid advent and increase of the disease, it appeared to have made no progress during the last seven hours. The treatment was to be continued, and we were to hold another consultation at 8 A.M.

In the night, however, a cab was sent for me, and, on arriving, I found that the patient had just died. I learnt that a second rigor had occurred at midnight, and that he became rapidly worse; the discharge was more profuse from the mouth, and began also to come from the nostrils; the swelling under the jaw increased enormously, and extended backwards to beneath the ears; the voice became husky and the breathing difficult; he became very restless, turned across the bed on to his back, and died at 3 A.M. The discharge was never really black (Dr. Richardson termed it *sepia-coloured*), and the odour, although exceedingly disagreeable, was never gangrenous. The throat swelling, which came on so rapidly after the second rigor, was examined by me just after death, and it precisely resembled, in external outline, the enlargement which accompanies the deadly forms of scarlet fever. There was, however, no rash upon the skin, and the commencement and location of the first symptoms had nothing in common with that disease. The body ran rapidly into putrefaction.

The room was disused, the linen burned, and other precautions were adopted. The patient's wife, who attended closely to him, was very prostrate and ill for a week or two afterwards, and she ascribed this to having "caught a whiff of his breath." The son, however, who applied the iodine and changed the pieces of lint, and helped the patient about in bed, is quite

well, and no member of the family has since suffered in any way like the patient.

The onset of this frightful malady was marked by the midnight rigor, and at 3 A.M. appeared the difficulty of utterance. Precisely as midnight recurred there was a second rigor, and this again was followed by rapid extension of the local symptoms, and death at the recurrence of 3 o'clock. Profound toxæmia from the first stamped death upon this gentleman's countenance; and the immense scarlet-fever-like enlargement of the throat, which came on after the second rigor, only aided, by mechanical pressure upon the larynx, that vital prostration which had, as it were, already mixed up death with life.

Although I have classed this with cases of malignant pustule, yet it materially differs therefrom—while points of resemblance and analogy are presented by many other diseases, e.g., scarlatina maligna, some rare cases of typhus, the plague, and cases of animal or venomous poisoning.

(c) CONCERNING CHRONIC DISEASES.

ART. 25.—*On Tuberculosis.*

By Dr. J. HUGHES BENNETT, Professor of the Institutes of Medicine in the University of Edinburgh.

(*Lancet*, July 4, 1863.)

We take the following remarks on the pathology, natural progress, and treatment of tuberculosis from one of Dr. Bennett's lectures on "Molecular Physiology and Therapeutics" recently appearing in the *Lancet* :—

Pathology of tubercle.—"In endeavouring to determine the nature of tubercle, we must remember that it occurs in young persons in whom the nutritive functions are deficient in energy, whether from poverty and incapacity of obtaining food, from deficient stamina, or from causes of whatever kind which induce exhaustion. Hence its frequency among the ill-fed poor, in orphan and foundling institutions, among badly-nursed children or weak and dyspeptic young persons, and after acute inflammations, whooping-cough, eruptive fevers, and other disorders that weaken the body. When, under such circumstances, exudation occurs in one or more textures, it does not undergo those changes we observe following inflammation in healthy persons. The vital changes are slow, and easily arrested. Instead of cells and perfect textures being produced, the efforts at vital transformations are abortive. The whole remains molecular and granular, or, at most, ill-formed nuclei are produced, which have received the name of tubercle corpuscles.

"It is rare, however, that this weakness of the constitution acts uniformly at all times and in all textures. Hence it may frequently be observed that tubercle is more or less associated with pus and granule cells, or fibrous and other growths; with the exception of cancer, with which it is rarely combined.

"I regard tubercle, therefore, as an exudation, which may be poured out into all vascular textures in the same manner and by the

same mechanism as occurs in inflammation, only from deficiency of vital power it is incapable of undergoing the same transformations, and exhibits low and abortive attempts at organization, and more frequently, as a result, disintegration and ulceration. For the same reason we observe that whenever an undoubted inflammation becomes chronic with weakness, the symptoms and general phenomena become identical with those of tuberculosis. Hence there is little difference between a chronic pneumonia of the apex of a lung and a phthisis ; the one, indeed, passing into the other.

"When we endeavour to discover THE ORIGIN of the weakness producing this effect on the exudation, we must ascribe it to imperfect nutrition ; indeed, it is impossible for any observant practitioner to avoid noticing throughout the whole course of the disease the derangement that occurs in the digestive system. All writers refer to the deficiency and irregularity of the appetite, and the functions of the whole alimentary canal will be found from first to last in an abnormal condition : the tongue is either furred and furrowed, or glazed and unusually red ; the teeth are carious ; the stomach capricious—sometimes rejecting food, at others retaining it an unusual time, with accumulation of flatus. There is a general indisposition to eat fat or fatty substances ; and the appetite is feeble, absent, or, in rare cases, voracious. In the former case there is thirst and eructation of acid matters into the mouth ; flatulence and tympanitis of the bowels are frequently complained of ; the alvine discharges and egesta are as irregular as the food and ingesta. Sometimes there is constipation, at others diarrhoea. The stools are only slightly tinged with bile, and in children often consist of white glairy matter, like white of egg. It may also be invariably observed, that when by proper regulation of the diet, of exercise, or other circumstances which regulate the nutritive functions, the alimentary canal performs its duty, the health improves, and the tubercular formations diminish.

"These, indeed, according to their excess or progress in particular organs, communicate to the disease more or less of a local character. In systematic works they have been described at length as separate diseases, although, in truth, they are only manifestations of one disease.

"After a time the continuance or violence of the local disease reacts upon the constitution, and a state called hectic fever is established, the which, inducing exhausting diaphoresis and emaciation, ultimately destroys the patient."

Natural progress of tuberculosis.—"In tracing, therefore, the natural progress of tuberculosis, we observe it to commence in debility caused by impairment of nutrition. This leads to local congestions and exudations. The latter remain abortive, and consist of molecules, granules, and imperfect nuclei, which soften and cause ulceration, with more or less disorganization. The great contribution of M. Louis to the pathology of this subject was the establishment of a law, that whenever tubercle occurred in the body it also existed in the lungs, and whenever it occurred in the lungs it appeared first at the apex. This law, though now known to be

subject to several exceptions, is still so generally correct as to be of the utmost service in diagnosis. Now, in the lungs, it was long supposed, and the opinion is still very general, that tubercle almost always proceeded onwards to a fatal termination; yet so far is this from being the fact that it can easily be shown that tubercle is arrested spontaneously in one-third of all the persons in whom it occurs. Nothing is more common in examining dead bodies than to meet with cretaceous and calcareous concretions at the apices of the lungs more or less associated with cicatrices. Of seventy-three bodies which I examined consecutively some years ago in the Royal Infirmary, I found these lesions in twenty-eight. Of these, puckering existed with induration alone in twelve, with cretaceous or calcareous concretions in sixteen. Since then I have examined many hundred lungs at the inspections in the Infirmary, and am satisfied that these proportions exist pretty constantly. At the Salpêtrière Hospital in Paris, Roger found them in fifty-one bodies out of a hundred; at the Bicêtre Hospital, in the same city, Boudet found them in 116 out of 135 bodies. Both these institutions are establishments for persons above seventeen years of age.

"These lesions are so frequent, therefore, that it is important to determine whether they are really proofs of arrested tubercle. This seems to be established by the following facts:—

"1. A form of indurated tubercle is frequently met with, gritty to the feel, which, on being dried, closely resembles cretaceous concretions. 2. These concretions are found exactly in the same situation as tubercular deposits are. Thus they are most common in the lungs, and at their apices. 3. When the lung is the seat of tubercular infiltration throughout, whilst recent tubercle occupies the inferior portion, and older tubercle and perhaps caverns the superior, the cretaceous and calcareous concretions will be found at the apex. 4. A comparison of the opposite lungs will frequently show, that whilst on one side there is firm encysted tubercle, partly transformed into cretaceous matter, on the other the transformation is perfect, and has occasionally even passed into a substance of stony hardness. 5. The puckering found without these concretions exactly resemble those in which they exist. Moreover, whilst puckering with grey induration may be found at the apex of one lung, a puckering surrounding a concretion may be found in the apex of the other. 6. The seat of cicatrices admits of the same exceptions as the seat of tubercles, and in about the same proportion. There can be no question, therefore, that these cicatrices and concretions for the most part indicate the arrestment, disintegration, and transformation of pre-existing tubercular exudations into the lungs.

"The arrestment of tubercle in the lung is not confined, however, to its early stage. It may be stopped at any period, and numerous cases are now known where even vast tubercular caverns have healed and cicatrized. I here show you a series of preparations, which must convince the most sceptical of the truth of this statement."

Treatment.—"It follows, therefore, that if we can succeed in supporting the nutritive functions, there is no reason why tubercle once

formed should not be gradually absorbed, and a tendency to subsequent deposits completely checked. Formerly this was rarely accomplished, in consequence of the idea that phthisis pulmonalis ought to be treated by paying attention especially to the lungs and respiration. Hence cough mixtures, sedatives, a warm atmosphere, tar vapour, and other substances to influence the local lesion. Other symptoms had their special treatment, such as sulphuric acid to relieve sweating, acetate of lead and opium to check haemoptysis, tonics to give strength, astringents to check diarrhoea, and so on; while so far from any vigorous effort being made to improve nutrition, the diet was kept low, consisting of farinaceous substances, or at most milk; and to avoid irritation, the patients were confined to bed or their rooms, which were kept at an equable temperature.

"Our present knowledge has led to a complete revolution in our practice. Thus, moderate exercise to stimulate respiration, cold sponging, nutritious diet, and a bracing system have been found more beneficial; at the same time avoiding anodynes and cough mixtures, which, by diminishing the appetite and inducing weakness, interfere with nutrition. Indeed it has been proved that the best method of lessening cough, expectoration, and sweating are the means which produce increase of general strength; so that if we can carry out the general indication, the local symptoms may be safely left to themselves.

"In doing this, we have now the advantage of possessing a remedy which in cases of tuberculosis is of the highest nutritive importance, as it gives to the system that fatty element in which it is so defective, and in a form that is more easily assimilated, and more capable of adding to the molecular element of the body than any other. I allude to COD LIVER OIL.

"And now, gentlemen, you cannot fail to perceive how the molecular doctrine of organization and of growth not only explains the known facts in physiology and pathology, but constitutes the basis for a true therapeutics. Fatty particles, as we have seen, form the molecular fluid of chyle; while out of chyle, blood, and through it all the tissues, are formed. Impairment of digestion in scrofula and tuberculosis renders chylification imperfect; the fatty constituents of the food are not separated from it and assimilated; the blood consequently abounds in the albuminous elements, and when exuded forms, as we have seen, tubercle. To induce health, it is necessary to restore the nutritive elements which are diminished, and this is done directly by adding a pure animal oil to the food. While an inflammatory exudation in previously healthy persons should be treated by supporting the vital powers generally, so as to permit its molecules going through the transformations necessary for their growth and elimination; in tuberculosis we add the constituent of food necessary for the formation of the molecules themselves. By so doing, we form good chyle and blood; we restore the balance of nutrition which has been disturbed; respiration is again active in the excretion of carbonic acid gas; the tissues once more attract from the blood the elements so necessary for their sustenance. The entire economy is renovated; so that while the histogenetic

processes are revived, the histolytic changes in the tubercle itself also are stimulated, and the whole disappears. When, in 1841, I first announced the virtues of cod-liver oil as an analeptic or nutrient in this class of cases, so little was the substance known that linseed oil was furnished to the Royal Infirmary of this city instead of it, when I induced Dr. Spittal to try it in his wards. At present, I need scarcely say, whole fleets are engaged in transporting the oil from the extensive fisheries where it is manufactured for medical purposes; and its beneficial results are universally recognised.

"In 1852 Dr. Wood, of Philadelphia, remarks of it in his Practice of Physic, (see vol. ii., p. 95, note,) that in Philadelphia during the ten years from 1840 to 1849 inclusive, the average proportion of mortality from phthisis was 1 in about 6·76 from all causes, or 14·8 per cent., and the same average existed in previous years. Cod-liver oil was then generally used in its treatment, and the mortality sunk in this disease during 1850-51 to 1 in 8·33, or about 12 per cent., and in 1851 it was only 11·86 per cent.

"In 1862 Dr. C. J. B. Williams, in one of the Lumleian Lectures delivered to the London College of Physicians, observes, that the experience of Louis and Laennec gave an average duration of two years' life in phthisis after it was decidedly developed, but that since cod-liver oil was introduced, he infers, from 7000 cases, that the average duration of life has been four years—that is, doubled.

"My own conviction is, that innumerable cases which formerly would have died rapidly, now rally, live for years, and many of them ultimately recover. The hopelessness which used to seize upon many consumptive persons and on their friends is also now removed, and the resolution to combat the disease by appropriate diet, exercise, and other hygienic means, has added further success to our treatment.

"I venture then to say, that in the same manner that in recent times we have diminished the mortality in cases of acute inflammation, so we have diminished the mortality and increased the duration of life in cases of tuberculosis, and more especially in that most fatal form of it—phthisis pulmonalis. In the one disease as in the other, this improvement can only justly be ascribed to the advance of physiology and pathology; to our superior knowledge of the nature of the disease, and, as a consequence, to our treatment of it on more scientific and successful principles."

ART. 26.—The Connexion between Tuberculosis and Insanity.

By Dr. T. S. CLOUSTON, Assistant Physician to the Royal
Edinburgh Asylum.

(*Journal of Mental Science*, April, 1863.)

A long and elaborate paper based upon the statistics of the Royal Edinburgh Asylum, ends in the following conclusions:—

1. Phthisis pulmonalis is much more frequent, as an *assigned cause of death* among the insane, than among the general population.

2. Tubercular deposition is about twice as frequent in the bodies of those dying insane as in the sane.

3. Phthisis pulmonalis is the "assigned cause of death" in only about one half of those in whom tubercular deposition is found after death.

4. The brain in the cases of tuberculosis is not so frequently diseased in a marked manner as it is in those dying of other diseases among the insane. In the majority of the cases the brain is pale, anaemic, irregularly vascular, with a tendency to softening of the white substance of the fornix and its neighbourhood, and the gray matter of lower specific gravity, than in any other cases of insanity.

5. Tubercle is not more frequently found in the nervous centres among the insane than among the sane, and when found, it does not in all cases, or even the majority of them, produce any symptoms, and is not connected with any particular form of insanity.

6. Tubercle of the peritoneum is not more frequent among the tubercular insane than among the same class in the sane. In the former it is more frequently associated with melancholia and monomania of suspicion than ordinary tuberculosis of the lungs.

7. The average age at death of the cases of tuberculosis is about three years below the average age at death among the insane generally, and the average age of those in whom *much* tubercular deposit is found is five years below the general average.

8. The proportion of the tubercular who had had previous attacks of insanity is about the same as among the insane generally.

9. There is hereditary predisposition in seven per cent. more of the cases of tuberculosis than of the insane generally.

10. Monomania of suspicion is the form of insanity in which tuberculosis is most frequent, and general paralysis stands at the other end of the scale that marks the frequency of tuberculosis in the different forms of insanity ; mania stands next to general paralysis, and melancholia to monomania of suspicion ; while the tendency to dementia, in all forms of insanity, is greater among the tubercular than among the non-tubercular. A majority of the cases of general paralysis and mania die non-tubercular ; a majority of the cases of melancholia, monomania, and dementia exhibit proofs of tuberculosis after death.

11. In all the cases of general paralysis which were tubercular the disease had commenced with depression.

12. In a certain number of cases (about one fourth of all those in whom tubercle was found) the insanity is of such a peculiar and fixed type that it may be called "phthisical mania." In all those cases the phthisis is developed so soon after the insanity that tubercles must have already formed in the lungs, or a strong tubercular tendency been present and about to pass into actual tuberculosis when the insanity appeared. We know that the chief characteristic of tuberculosis is an impaired energy in the nutritive processes ; and as a badly nourished bone becomes carious or necrosed for slight causes, or a badly nourished skin becomes subject to parasites, so disordered action results in those imperfectly nourished brain-cells

from causes which would not be felt by a healthy brain. It is not the enfeebled nutrition directly so much as the perverted action to which the enfeebled nutrition predisposes, that produces the insanity. The peculiar mental state, the incurability of the insanity, the appearance of the brain after death, and its lowered specific gravity, all point to such a cause for the derangement.

13. There is a special relation between deep melancholia with long-continued suicidal tendencies and refusal of food and lung disease—either gangrene or tubercular disorganization.

14. There are a few cases in which the insanity is only a kind of delirium, occurring during previously developed chronic phthisis, and soon passing off.

15. The prognosis is most unfavourable if tuberculosis occurs in any case of insanity.

16. Half the cases of tuberculosis die within three years after the commencement of the insanity.

17. There is no proof that the "morbid influence of the pneumogastric nerve" has anything to do with the tuberculosis cases of insanity.

18. Long-continued insanity does not tend to the development of tuberculosis more than to the production of other diseases.

19. Phthisis is entirely latent in between one third and one fourth of all the cases among the insane, and in almost all the others it is latent for a considerable time. This latency is most frequent in general paralysis, in which the majority of the cases of phthisis exhibit no symptoms whatever.

20. There are very few cases where the commencement of insanity benefits the phthisis, but in a few, where the phthisis is very chronic, an attack of insanity may be followed by the permanent disappearance of the phthisical symptoms, or attacks of mania may alternate with symptoms of phthisis. In by far the majority of such cases, however, the phthisical symptoms are merely masked, while the deposition of tubercle goes on.

ART. 27.—*On the Precautions calculated to Prevent the Transmission of Syphilis by Vaccination.*

By M. DIDAY.

(*Journal de Méd. et Chir. Prat.*, Août 2, 1863.)

It is all important to ascertain whether the individual, from whom the operator is desirous of obtaining vaccine matter, is affected with syphilis, and the characteristic signs of the disease must be sought for in those regions in which its symptoms most usually appear—viz., the genital and anal regions, the labial commissures, the scalp, and the folds of the skin of the thighs. Notwithstanding the healthy aspect of the vaccinal pustules, M. Diday opines that the surgeon should reject all children who habitually suffer from coryza, particularly if the edge of the incisors be indented, or if the epidermis of the palms of the hands or the soles of the feet does not present its normal consistency or colour.

From the appearance of the nurse, parents, brothers and sisters, relations and neighbours of the infant—in short, of all those from whom the child may have taken, or to whom he may have communicated disease—the surgeon will endeavour to form an opinion of its health. Without compelling all these individuals to submit to a regular medical examination, a glance at the mouth, eyelids, nose, and scalp of the persons present, and a rapid passage of the hand over the occipital and mastoidean regions to ascertain the condition of the lymphatics, will promptly allow him to form a correct idea of their state of health, and by inference, of that of the infant from whom it is contemplated to take the vaccine lymph.

M. Diday then supposes the case of a child previously healthy, but to whom the poison of syphilis has been inoculated together with vaccine matter. A chancre will then appear in the punctured spot, but in accordance with the well-known law of its evolution, it will first become apparent after the cicatrisation of the vaccinal pustule; or, as M. Lecoq has observed, four days after the operation, the normal progress of the vaccinal eruption will be disturbed, and instead of the usual pustule, an umbilicated sore will form, promptly covered with a thick scab, &c. Hence M. Diday concludes that it is necessary :—

1. To avoid charging the lancet in a pustule in which the suppuration is protracted beyond the tenth day; the existence of a chancre is here to be apprehended.

2. To reject, *a fortiori*, for the purpose of vaccination, all pustules presenting any irregularity in their aspect or progress.

The child to be vaccinated also calls for attentive examination; vaccinated subjects are used for the propagation of vaccine lymph, and if the eruption contains any seeds of syphilis, an entire population may be contaminated. To illustrate the importance of this inquiry, which may at first sight escape attention, M. Diday adduced a case, which he communicated on the 21st of May last to the Society of Medical Sciences at Lyons.

"A patient of mine," said he, "aged 36, suffering from syphilis, was delivered of a child, which I attended three months after its birth for a specific papular erythema of the back and thighs, and for mucous papulae of the mouth and anus. The infant was brought to me every four or five weeks for six months, and several relapses of gradually-decreasing severity had taken place, when the mother determined on having it vaccinated. She carried it for the purpose to the Hospital of La Charité, where the operation was performed on the 7th of May, 1863. The vaccinator instructed her to bring back her child at the expiration of a week. On the 19th, however, the mother visited me with the little patient, and I ascertained the presence, at the margin of the anus, of an extensive mucous papula, not merely excoriated, but deeply ulcerated, and of an eruption of the same nature in the folds of the thighs. These symptoms assuredly existed, and were distinctly marked when vaccination was performed; but the mother, actuated by selfish motives, had refrained from returning to the hospital, lest vaccine matter should be taken from her infant. Had she done so, it is highly probable

that no evil consequences would have followed, our internes being in the habit of carefully examining all children from whom vaccine lymph is taken, and in the present instance, the condition of the subject would have been detected on the most superficial inspection. Indeed when I saw the vaccine pustules on the twelfth day, they were covered with a yellower, thicker, and more humid crust than is usually observed at this period."

A child affected with syphilis has doubtless as good a right to enjoy the benefits of vaccination as another, and M. Diday remarked here that it is easy to reconcile public with private interests. When it is thought necessary to vaccinate a contaminated child, in order to prevent the lymph from being inoculated to others, the pustules should be destroyed with caustic; this procedure does not diminish the preservative power of the vaccination, and protects the persons who surround the infant from the perils of accidental or imprudently incurred contagion.

With regard to children, apparently in the enjoyment of perfect health, but to whom hereditary syphilis may have been transmitted, M. Diday recommends vaccination to be postponed for three full months after birth; statistics drawn up by this observer, show that in 158 infants tainted with hereditary syphilis, the pathognomonic symptoms broke out before the expiration of the third month in 146, and at a later period in 12 only.

Of course these figures do not imply that in doubtful cases, perfect health during the first three months of life is an absolute guarantee of future immunity. In accordance with M. Ricord's wise precepts, the natural anxiety of parents to elicit from the practitioner a positive prognosis on this subject, should not induce him to express any but a very guarded opinion. But these returns certainly authorize the surgeon to vaccinate a child who has enjoyed perfect health up to the age of three months, and who may therefore be considered tolerably safe from the outbreak of syphilis.

ART. 28.—*On Rheumatic Gout.*

By Dr. FULLER, Physician to St. George's Hospital, &c.

(*Lancet*, September 26, 1863.)

In a clinical lecture on this subject Dr. Fuller says:—

" My experience induces me to believe that rheumatic gout is a disease *sui generis*—totally distinct from gout, and equally so from rheumatism. Indeed, it appears to me to resemble serofulous inflammation more nearly than rheumatism in its nature. Call it by whatever name you please—rheumatic gout, rheumatic arthritis, rheumatoid arthritis, or any of its other synonyms; but remember that it has no connexion with any other form of so-called rheumatic disorder. As well might you regard measles as identical with scarlatina on the ground of their both being accompanied by an eruption on the skin, as to consider rheumatic gout identical either with gout or rheumatism on account of its being, like those disorders, accompanied by pain and swelling of the joints. Depend upon it, rheumatic gout

has a history and pathology of its own ; and if it is to be treated successfully, its history and pathology must be carefully studied and its treatment conducted accordingly.

" Pathological research has shown that in the earliest stages of the disease the capsules of the affected joints are distended with fluid, the synovial membrane is thickened and intensely vascular, and vascular tufts or excrescences exist at the margins of the cartilages ; that as the disease progresses the fluid is absorbed, the interarticular fibro cartilages are also absorbed, and eburnation of the articulating surfaces take place ; that the heads of the bones become enlarged and altered in shape by the occurrence of interstitial absorption in some parts and of osseous deposits in others ; and that foreign bodies of varying consistence and character are often developed both within and without the joints—bodies which are sometimes cartilaginous, sometimes bony, sometimes attached by longer or shorter pedicles to the synovial membrane or to the ligamentous structures, and at others are loose within the articulation. It has shown that these changes may take place slowly without any general febrile disturbance or any acute local inflammatory action ; and on the other hand, that they may be preceded and accompanied by fever, and by pain, heat, and inflammatory swelling of the parts : that the bursæ and sheaths of tendons in the vicinity of the affected joints are prone to be implicated in the mischief, but that neither in the joints nor in the adjacent bursæ or sheaths of tendons are any of the ordinary products of inflammation found—there is no lymph, and no pus, and no urate of soda, as in gout. In other words, it has shown that the characteristic changes which occur in the joints as the result of rheumatic gout take place independently of active inflammation, and that the acute inflammatory action which sometimes precedes or accompanies these structural changes is simply a complication of the disorder, and by no means necessary to its perfect development.

" And what are the conditions under which these structural alterations in the joints occur ? They are not met with in the robust or vigorous, in well-fed persons with sound constitutions and sedentary habits ; they do not arise, like the deposits of urate of soda in gouty men, in connexion with excessive indulgence in the luxuries of the table, and defective excretion consequent on a diseased condition of the kidneys. On the contrary, they are more common in women than in men ; very frequently arise in persons who lead a temperate life, and are small eaters, and never present themselves in persons who are constitutionally sound, unless they have been subjected to some cause of nervous exhaustion and enfeebled health. Their favourite victims are the offspring of consumptive parents, and especially weakly women—women whose constitution is either originally delicate and unsound, or who from some cause or another have fallen into ill health. Amongst men, the most common exciting causes of the disease have appeared to me to be the cachexia which oftentimes follows excessive venery or syphilis, or the sleeplessness and exhaustion consequent on illtreated gonorrhœal rheumatism, or the depression resulting from anxiety, or from excessive and long-

continued mental exercise, or from over-fatigue or chill in persons of a delicate constitution or serofulous tendency ; whilst in women the disease is often traceable to the cachexia entailed by perversion of the uterine functions. It attacks the girl just arriving at puberty, in whom these functions are ill performed ; it invades the stiffening articulations of the woman who has arrived at that time of life which is marked by the cessation of the monthly periods ; it shows itself during the state of debility which follows a miscarriage or a difficult or protracted labour, more especially when the labour has been accompanied by flooding ; and it is a common sequel of over-long suckling.

" But whatever the exciting cause of the disease, its primary or essential cause is the same in all instances ; and although we are unable as yet to point out the precise nature of that cause,—although we know little of the morbid chemical actions which take place, and are at a loss to account for the peculiarities in the nutrition of the affected parts by which this form of disease is accompanied, it is impossible to doubt the existence of a special form of constitutional disorder. The history of the complaint, its course and symptoms, and its pathological effects, all indicate the agency of some cause distinct from that which occasions gout or rheumatism. Our inability to demonstrate the nature of the chemical changes in the blood, or, in other words, to prove the formation of a special poison, is not a valid argument against the existence of such a poison. The same line of reasoning would be equally conclusive against the existence of any special form of blood-disorder in small-pox, typhus fever, scarlatina, and pyæmia. The fact is, our means of analysis of organic fluids are at present so imperfect, and we know as yet so little of the influence exerted on the functions of assimilation and excretion by modifications of the nervous power and other similar agencies, that in this, as in other forms of disease, we cannot even offer a reasonable conjecture as to the character of the chemical changes which take place, or as to how those changes are brought about. All that chemistry has as yet enabled us to assert is the bald fact originally pointed out by Dr. Garrod, that the blood in these cases does not, like the blood in gout, contain uric or lithic acid.

" Thus, then, as there is no very certain mode of diagnosing this disorder, and as, if it is to be treated successfully, its special character must be recognised early in the attack, I will endeavour to bring before you certain facts which will serve as guides to a correct diagnosis.

" I would premise that the disease may make its approach either in an acute or in a chronic form. In the latter case, its true character is not likely to be mistaken ; but in the former it often resembles an attack of acute rheumatism so closely as to tax our powers of diagnosis to the utmost. There may be heat of skin and profuse perspiration, furring of the tongue, loading of the urine, acceleration of the pulse, and pain, redness, and swelling of the affected joints—symptoms which, to a greater or less degree, are always attendant on acute rheumatism. But even from the first there are certain peculiarities which ought to excite suspicion as to its

nature. The skin, though hot, is less so than in acute rheumatism ; the perspiration does not possess the peculiar rheumatic odour in any marked degree ; the pulse, though quick, is feeble ; the tongue is usually less furred ; and the local pain and swelling are seldom confined to the knees and other larger joints, but invade the wrists and small joints of the fingers ; they are more persistent than the inflammatory swellings of true rheumatism, and they attack a larger number of joints simultaneously.

" If the true character of the disorder is overlooked at the first, a few days' observation at the bedside ought to rectify the diagnosis. The symptoms rarely yield to alkalies ; the tongue cleans, the heat of the skin subsides, and any slight odour which may have attended the perspiration speedily disappears ; but the skin remains constantly bedewed with moisture, and becomes daily more flaccid and less elastic, the pulse gets weaker, and the pain and swelling of the smaller joints assume a more prominent aspect. The inflammation, however, though continuing so obstinately, is not so acute, and does not appear to threaten the integrity of the joint, as true rheumatic inflammation does under similar circumstances. When true rheumatism fixes obstinately on a joint, the fear of permanent mischief and ankylosis of the joint at once presents itself to the mind. The inflammation of the other joints subsides, but the pain and swelling in the one joint increase daily ; and it is obvious to the merest tyro in medicine that if that joint be not kept motionless, and leeches, blisters, and fomentations, or mercurial ointment applied, ankylosis of the joint is the most favourable issue which can be expected. But it is otherwise in respect to the inflammation of the joints which accompanies rheumatic gout. Rarely, indeed, in the acute form of the disease, is the inflammation confined to one joint ; on the contrary, three or four, or even a larger number, of the joints remain affected throughout. There is not the same heat, or redness, or tenderness of the affected joints ; the fear of adhesive or suppurative mischief does not arise ; the application of a splint, and of leeches and blisters, does not suggest itself ; and although the joints may remain permanently enlarged and distorted, they do not become ankylosed.

" When the disease makes its approach more slowly, and assumes from the first a non-acute or chronic form, its features are much more distinctive. The patient feels weak, languid, and uncomfortable ; she is oftentimes chilly, but nevertheless perspires on the slightest exertion ; the appetite is capricious, the pulse feeble, the urine often pale and clear, and the spirits are much depressed. Up to this time probably there may have been no swelling of the joints, and possibly no wandering pains in the limbs, so that no suspicion is entertained as to the nature of the impending mischief. The ill-health is attributed to the effect of a mercurial course, to the drain resulting from an excessive flow of the monthly courses, to profuse leucorrhœa, to amenorrhœa, or to one of the many causes which are productive of ill-health, and which may have been present in the particular case in question. But after a longer or shorter period, some pain or stiffness is perceived in one or more of the joints. Not unfrequently a knuckle becomes stiff and swollen for weeks or months

before any other joint is affected ; and even though the knees or other of the larger joints be enlarged, the knuckles rarely escape. They are seldom red, inflamed, or very tender to the touch ; on the contrary, they are relieved by gentle friction, and will often derive benefit even from tolerably active rubbing. Effusion within the joint is the principal cause of their enlargement ; but the bursæ and sheaths of tendons around the joint are also implicated, and are felt as circumscribed swellings. Moreover, the mischief is seldom confined to the immediate vicinity of the joints, but the sheaths of tendons may be felt hard and swollen in the palms of the hands and in other parts more or less remote from the primary seat of inflammation.

" In the more advanced stages of the chronic form of the disorder, the peculiarities of the case become even more apparent. Depression of spirits is a prominent symptom ; the constant clammy moistness of the skin is quite characteristic ; the extraordinary number of the joints implicated in the mischief is unlike what is observed in any variety of true rheumatism ; and the form of the articular swelling is such as cannot possibly be confounded with the effects of rheumatism. It is obviously due, in great measure at least, to enlargement of the extremities of the bones themselves, and not merely to effusion within their capsules, or to the thickening of the surrounding structures. Thus a material alteration occurs in the form, and oftentimes in the direction of the joints. The fingers, for instance, are drawn towards the ulnar or outside of the hand, and take a permanently oblique direction ; whilst the enlarged and partly dislocated extremities of the bones, more especially of the metacarpal bones, project in every variety of form, and constitute the nodosities which have been described by Dr. Haggard in his ' Clinical History of Disease.'

" Thus, then, to sum up the principal facts which have a practical bearing on the treatment of the disease, it may be stated : 1st. That the malady originates in mal-nutrition, resulting not unfrequently from some hereditary infirmity of constitution, but sometimes in connexion with cachexia induced by a variety of causes which exhaust the nervous system. 2nd. That the local changes to which it gives rise are essentially distinct from those produced by active inflammation, and more nearly resemble the results which might be expected from a slow perversion of nutrition ; indeed, a similar tendency to the formation of exuberant osseous growths around the joints whilst the articular textures within are suffering destruction and decay is observed in malignant disease of the joints, and in various strumous affections of the joints, both of which are connected with a constitutional taint. 3rd. That, whether in an acute or in a chronic form, the malady is one and the same, due to the same cause, connected with a similar failure of tone in the system, and productive of similar changes in the joints ; the only difference observable between the results in the acute and chronic cases respectively being that in the former they occur more rapidly than in the latter.

" If this view as to the nature of the disorder is correct—and its

whole history leaves little room for doubt on the matter—it follows that any treatment to be successful must have for its object the sustentation of the general health and the restoration of tone to the system. Whilst this is being effected, means may be taken to subduc the local irritation of the joints, and thus to mitigate our patient's suffering; but the primary object must be to improve the health, and so to check the continuance of those actions on which the enlargement and distortion of the joints depend. The remedies which are most serviceable in rheumatism and gout are of little avail in this form of disease. Colchicum, iodide of potassium, guaiacum, hot baths, vapour baths, and other similar remedies, if prescribed with a view to eradicate the disease proves mischievous rather than beneficial. They depress and enervate the patient, who is already low and exhausted; and thus they serve to establish the disorder which they were given expressly to get rid of. In private no less than in hospital practice the mischievous results which follow this mode of treatment almost daily force themselves on my attention. In short, if the remedies above-named are to be employed at all in the treatment of rheumatic gout, they should be used cautiously as alteratives in conjunction with tonics, and should not be administered as agents to be relied upon for the cure of the disease. The more I have seen of this form of the disorder, the more thoroughly have I discarded the views which, in common with other medical men, I formerly entertained respecting its treatment, and the more completely have I learnt to trust to tonics and occasional alteratives. In the acute stage of the disorder it may be necessary for a few days to administer alkalies and alterative doses of blue-pill or calomel, and to restrict the diet to broth or beef-tea; but when once the true nature of the malady has declared itself, I believe that in the majority of instances the more successful plan, notwithstanding the acute character of the symptoms, is to administer bark or quinine in combination with small doses of alkalies, and as soon as possible to interpose and check the continuance of the enfeebling clammy perspiration by means of a cold shower-bath or the dripping-sheet. Indeed, whether the disease be in an acute or in a chronic form, the general state of the system and the ever-varying condition of the secretions are the only rational guides to treatment. If, as often happens when the disease is chronic, the secretions are tolerably regular and healthy, if the bowels are acting daily and the alvine dejections are of a natural colour, if the urine is clear and remains so on cooling, and if the skin is neither dry nor damp and clammy, the most effectual remedies are bark, quinine, strychnine, iron in its different forms, cantharides, arnica, sarsaparilla, the mineral acids, and cod-liver oil; and they must be given in doses proportioned to the amount of depression they have to counteract; further, their action must be assisted by fresh air and exercise, change of scene, and a generous diet: meat twice or three times daily, with a full allowance of porter or ale, and wine, are essential adjuncts to the treatment. On the other hand, if the motions are pale, calomel or blue-pill must be given as alteratives; if the urine is loaded with lithates and the bowels are torpid, these secretions must be regulated in the ordinary

way by the exhibition of purgatives and alkalies ; the diet at the same time must be more or less restricted, and malt liquor prohibited. But even in these cases care must be taken not to depress the patient ; and while brandy or gin or whisky is substituted for the malt liquor and wine, an endeavour should be made to discover some nutritious food which the patient can digest and assimilate. If the skin is clammy, and the shock of cold water is followed by reaction and warmth of the surface, a cold shower-bath or the dripping-sheet should be employed daily, for nothing tends so powerfully to stimulate the capillary circulation and restore the tone of the system."

ART. 29.—*Tertiary Syphilis without History of any Primary or Secondary Stages.*

By Mr. HUTCHINSON, Surgeon to the London Hospital.

(*Dublin Medical Press*, May 20, 1863.)

We so frequently hear histories similar to those recorded in the two subjoined cases, that it is difficult not to believe that there is some truth in them. Commenting upon them Mr. Hutchinson says :—

"The two following cases came under my care on the same day, and as they seemed to me to present good illustrations of a state of things which we not unfrequently meet with in practice, and which has not received the attention its importance claims, I venture to record them. I refer to the occurrence of tertiary symptoms of an unmistakable character in married persons who deny all history of primary or secondary ones. Of course, the denial of previous symptoms by the patient herself must never rank as of the slightest value as evidence unless corroborated by other facts, of which the surgeon can himself judge. - But very often in the cases to which I refer these corroborative facts are very strong indeed. For instance, the woman may have borne several children, none of whom have suffered in any marked degree. Although not a conclusive one, this is a weighty fact against the belief that the patient herself has ever suffered from self-acquired constitutional syphilis. Still, however, the chief reason for believing that cases of the kind alluded to are not unfrequently *bonâ fide* is afforded by their common occurrence."

Case 1.—Nodes and Ulcerated Throat Twenty-four Years after Marriage—No History of any previous Symptoms—The Younger Children free from Suspicious Symptoms.

Mrs. E., a healthy-looking woman, aged 42, came to me on February 17, on account of a large diffused node in front of the right tibia. She described the nocturnal pain as having been very severe. The node first formed a year ago, and she then attended Mr. Childs, who told her it was to be attributed to the same cause as a badly ulcerated throat from which she then suffered. She had never had sore throat before. A portion of alveolus came away. At the time of the development of the sore throat and node she was living very badly, owing to her husband being out of work.

On the most careful cross-questioning, I could obtain no history of any other symptoms in the least resembling those of constitutional syphilis. It will be seen that these only date back one year. I could feel no doubt that the node was syphilitic, and Mr. Childs, from the expression he used to her, evidently took the same view a year ago. She obtained most marked relief from the medicine ordered by Mr. Childs. Now for the married history. She married at 17, and was three years married before she conceived. Both she and her husband were throughout in excellent health. Her first child, born four years after marriage, died at six weeks old, after a short illness. Second birth, dead-born at seven months, after a fall; third died, aged thirteen months, of measles; fourth is living, aged 11, and in good health; the fifth I saw, a healthy lad, aged 10; teeth good; a sixth is 5, and a seventh 3, and the eighth is a baby, aged ten months. The last I saw, and he appeared in excellent health. In addition to the above, Mrs. E. has had two miscarriages. Without being too definite as to how the taint was derived, I think it must be admitted that she is now the subject of a late tertiary form of syphilis, and that her younger children have not shown specific symptoms. Her youngest, born since the first manifestation of the taint, is healthy. My own suspicion is, that it is an instance of slight taint derived by foetal contamination. The father is stated to have shown no symptoms.

Case 2.—Nodes, Ulcerated Throat, and Disease of Nasal Bones Seventeen Years after Marriage—No History of previous Symptoms—Younger Part of Family Healthy.

Mrs. M., aged 41, came to the hospital on February 17. She had a very large perforation of the hard palate, and diseased bones of the nares. Her nose was depressed, and she had also on the forehead large depressions without scars. Respecting these latter, she stated that she had noticed the bone falling in for some years, but did not recollect ever having had any swelling; on other parts of the head she had suffered much from painful swellings. The throat and palate had been ulcerated for seven years, and began at a time when she was pregnant with twins.

Married History.—She married at 17, being then in excellent health. Was confined a year later of a dead-born child, and was very ill at the time. Then followed a series of miscarriages; and it was seven years later before she had a living child. This child, a girl, is now aged 17, a stout, well-grown young woman, pallid, but without any evidences of special cachexia; teeth well formed; no keratitis. It should be stated that after her first confinement the mother regained good health and remained well. The next was a boy, now aged 14, and healthy. The next is a girl, aged 12, delicate, but with no specific ailments. The twins come next—two boys, both living, aged 7, and in good health. The last is a girl, aged 2, whom I saw, stout, well-grown, and without any cachexia. In addition to these still living, there have been born five others (at various positions in the family) which have died in infancy. In none of these, nor in any of the living ones, can I obtain the slightest history of symptoms allied to syphilis in infancy. All died of acute diseases. Her husband is reported to be healthy, but to have a peculiar "sealy breaking-out" on his shoulder. In this case, as in Mrs. E.'s given above, it is probable that the mother has obtained the taint by foetal contamination, although the children had never themselves suffered from the disease in a sufficiently concentrated form to show symptoms. Observe that, supposing the father to have had syphilis before marriage, his first living child was not born till eight years afterwards, so that there was time for the taint to have passed into a latent and feeble form.

ART. 30.—*On a Valuable Diagnostic Sign of the Existence of Acquired Syphilitic Taint.*

By Dr. H. CRITCHLEY BRODRICK, Assistant-Surgeon Madras Army, and Residency Surgeon, Indore.

(*Madras Quarterly Journal of Medical Science*, October 1862, and July 1863.)

The sign upon which Dr. Brodrick insists is *substernal tenderness*—a sign, as it appears, casually alluded to by M. Ricord, but in no sense insisted upon as diagnostic by this eminent syphilographer. Dr. Brodrick says :—“I believe the importance to the practical physician of the discrimination of this one aid to diagnosis is incalculably great, and I hope in this paper to draw the attention of members of the profession to it, that it may be tested by them, and that it may unravel the thread of many a doubtful case in their practice as it has done in mine.

“Substernal tenderness can only be detected by pressure over the bone, and when searching for it formerly, I used to *knead* the bone with the fore and middle fingers, carefully, from the manubrium to the xyphoid cartilage.

“In a case of suspected constitutional syphilis, if the patient be asked if he has got a pain in his breast bone, he will probably answer in the negative. The medical man should then *knead* the sternum carefully and gently along the whole of its course, and the tender spot will generally be found at the commencement of the lower third. With much practice and observation in this class of cases I now generally succeed in touching the tender spot at once, to the great surprise of the patient, previously quite ignorant of the existence of this tenderness.

“If substernal tenderness be found, I believe we are quite safe in assuming that the subject of it labours under acquired venereal taint, which may have been masked by divers symptoms, and be quite unsuspected both by the patient and the surgeon.

“It often furnishes a clue to the cause of very anomalous symptoms, and a most invaluable guide to us in treatment.

“For the past eighteen months I have been *kneading* patients' sternums most diligently, and have been not a little laughed at for the same by those not previously aware of the significance of substernal tenderness.

“The native doctors attached to the Malwa charitable dispensaries, which I superintend, all now practice this palpation in suspected cases, to the very great benefit of their patients.

“Although the existence of substernal tenderness is, I believe, unerringly significant of venereal dyscrasia, it must be borne in mind that a patient may be constitutionally syphilitic without manifesting this particular sign. But, when detected, in it the physician has a very valuable guide for treatment.

“Substernal tenderness is, no doubt, produced by a periosteal inflammation slight in degree and, may be in its immediate effects, such as pain and tenderness, inappreciable to the patient.

"I have hunted diseases to their source at once, in scores of cases, since I became aware of the existence and the importance of this diagnostic sign, and the rapid improvement of such cases under the specific treatment indicated above, has invariably confirmed my diagnosis. I speak confidently on this point; that I am justified in this confidence any one can test easily in his practice.

"Constitutional syphilis prevails very largely in Malwa, so that I have a large field in which to practise palpation of diseased sterna amongst the sick coming to my dispensaries. I have had a limited experience of this diagnosing amongst Europeans, but I have found substernal tenderness in at least twenty such, and in as many the sign has led to the successful treatment of the disease it indicated.

"In a suspected case, then, look for this tenderness; it will usually be found at the commencement of the lower third, occasionally in the upper third, and very seldom in the space intermediate.

* * * * *

"I now very briefly allude to some other signs of acquired constitutional syphilis, which too are alluded to by Ricord as "inguinal and cervical adenito," in other words, chronic induration and enlargement of inguinal and cervical glands.

"I believe that whenever you find substernal tenderness—ergo constitutional syphilis—you will find some of the upper tier of inguinal glands enlarged, hard, moveable under the finger and painless, and never single. Ricord calls this affection "multiple adenito."

"Enlargement of the posterior cervical glands is not so easily detected, but if I take sufficient pains in the search I never fail to find 'posterior cervical adenito.' Such an adenito may very commonly be found between the posterior border of the sterno-mastoid and the anterior border of the trapezius muscle.

"Here then we have three very valuable diagnostic signs of constitutional syphilis being present, of which I attach most importance to the substernal tenderness."

Dr. Brodrick gives a tabulated account of 62 cases, with some lengthy comments upon them. What it concerns us especially to know is contained in the following paragraph.

"In 56, out of the 62 cases, substernal tenderness was present in a greater or less degree; it was absent in 5 only—viz., in case 3 of congenital syphilis in an infant 18 months old, and in case 4, of the mother of the same infant. It was absent again in case 19, where the other indications of secondary syphilis had been present for 38 days only. Absent, too, in case 23, where other unequivocal symptoms proved clearly the venereal origin of disease in the nose, ozaena, and loss of the sense of smell. Lastly, it was absent in case 41, where there were present other reliable evidences of constitutional syphilis."

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 31.—*Influence of Hypertrophy of the Heart and Disease of the Cerebral Arteries in the Production of Apoplexy.*

By Dr. A. EULENBURG.

(Virchow's *Archiv*; and Wicner *Med. Wochenschr.*, September 6, 1862.)

Dr. A. Eulenborg has investigated this subject statistically in a prize thesis presented to the Medical Faculty at Berlin. In 42 cases of sanguineous cerebral apoplexy, abnormal conditions of the arteries at the base of the brain—hardening, calcareous deposits, and fatty degeneration—were found in 29; in 13 cases only were the large cerebral arteries free from disease. In 9 of the 42 cases there was hypertrophy of the left ventricle. Of the 29 cases in which disease of the cerebral arteries was present, there was also more or less extensive endocarditis in 17, alterations of the valves of the heart in 19, and hypertrophy of the left ventricle in 6 only. Dr. Eulenborg hence draws the conclusion that disease of the cerebral arteries is a much more frequent cause of apoplexy than cardiac hypertrophy.

ART. 32.—*On the relation of Chorea to Rheumatism, Valvular Disease of the Heart, and Pregnancy.*

By Dr. KIRKES, Assistant-Physician to St. Bartholomew's Hospital.

(*Medical Times and Gazette*, June 20 and 27, 1863.)

The following remarks are too good to be abridged, and the two cases which accompany them too valuable to be omitted:—

“ 1. It is now well known that chorea is one of the evils to which the subjects of acute rheumatism, or of the rheumatic diathesis, are liable. This association of disease has been observed much more frequently in this country and in France than in Germany, the pathologists of which latter country, indeed, are disposed to doubt its occurrence. (See, for example, Hasse, in Virchow's ‘Handbuch der Pathol. und Therapie.’ Bd. 4, p. 164.) Sometimes the chorea is developed during the progress, or towards the subsidence of the rheumatic attack; occasionally, though rarely, it precedes the development of the rheumatism; very frequently it occurs some weeks, or even months, after the rheumatic affection of the joints has disappeared. The nature of the relation between the two forms of disease has been the subject of much discussion. Formerly, when our knowledge about chorea was much more limited than it now is, the development of the choreic and other nervous phenomena in the course of rheumatism was attributed by some to simultaneous inflammatory mischief in the membranes of the brain or spinal cord, by others to sympathy of the nervous centres with coincident pericar-

ditis.* But the fact since ascertained, that rheumatic chorea may occur and prove fatal without leaving any trace of inflammation about either the cerebro-spinal centres or the pericardium, shows that some other explanation is requisite. Dr. Begbie, who has written so well on the subject, advanced the opinion that the same diathesis or morbid condition of the blood which gives rise to rheumatism may give rise also to chorea ; the irregular muscular movements, as well as the affection of the joints and of the heart being, in his opinion, the results of the rheumatic diathesis. (*Monthly Journ. of Med.*, 1847 ; also his lately published 'Contributions to Practical Medicine.') With this opinion the observations of Dr. Watson and Dr. Todd in the main agree. M. Séé also took the same general view, and even inclined to the belief that the rheumatic diathesis is the real cause of nearly all cases of chorea, whether any affection of the joints be established or not. He believed, however, that it is mainly through the medium of an inflammatory affection of some one or more of the serous membranes, especially the pericardium, that the rheumatic diathesis brings about the nervous affection. (*Mémoires de l' Acad. de Méd.* Paris, vol. xv., 1850.) Cases, however, not unfrequently occur, and prove fatal, without exhibiting any signs of serous inflammation ; hence such explanation cannot always hold good. In a paper published in the *Medical Gazette*, in 1850, I endeavoured to show that one of the most common attendants on fatal cases of chorea is an inflammatory affection of the cardiae valves, and that probably such valvular affection has an important share in the production of the nervous symptoms. Subsequent observation has confirmed me in that view, and I now believe that whenever chorea occurs in association with acute rheumatism, the valves of the left side of the heart are inflamed, and that therefore the association is not between chorea and rheumatism, as usually believed, but between chorea and valvular disease of the heart, excited by rheumatism. According to this view chorea occurs in rheumatism, not simply because of the rheumatism itself, but because the rheumatism is so apt to excite endocarditis, on which I believe the chorea mainly to depend.

"The principal grounds for this opinion are, first, the frequency, if not invariableness of an endocardial murmur in cases of chorea associated with rheumatism ; secondly, the fact that in all the fatal cases of rheumatic chorea examined by myself after death the valves of the left side of the heart have presented unmistakable proofs of recent inflammation ; and, thirdly, that evidence of like inflammation is furnished by the records of nearly every fatal case published, whenever the state of the valves of the heart is mentioned.

"2. Cases of chorea not unfrequently occur in which no other attendant morbid condition can be found than that of valvular disease of the heart. Sometimes such cases happen in individuals belonging to a rheumatic family, and in whom therefore the rheumatic diathesis may be assumed to be in some degree operative ; sometimes they

* For a full account of these views, see the valuable work of Dr. Burrows, *On Disorders of the Cerebral Circulation*.

happen in association with some of the trivial temporary disorders, such as worms and the like, which have been mentioned as occasional attendants on chorea. Very often, however, I have failed to detect in such cases any evidence of rheumatic tendency to account for the cardiac disease, and any proof of the existence of any other ailment likely to explain the chorea. Whatever be the circumstances under which these cases of chorea occur, the evidence of valvular disease is usually clear, and is furnished by endocardial murmurs during life, and, when they prove fatal, by structural changes observed after death. The existence of an endocardial murmur in many cases of simple chorea was long ago pointed out by Dr. Addison, and the observation has since been abundantly confirmed by Dr. Todd and others. When at the base of the heart, and attended by general signs of anaemia, it is of course open to doubt whether organic disease has any share in its production, or whether it be not entirely functional. When at the apex, however, where, indeed, it is most commonly perceived, and where anaemic murmurs are rarely heard, its origin in mitral imperfection is nearly certain. It has been suggested that such apex murmurs may occasionally be due to irregular choreic contraction of the musculi papillares of the heart, whereby valvular imperfection and regurgitation may be temporarily induced. Be this explanation true or not, and I doubt its correctness, for there is no good proof that involuntary muscular organs participate in the choreic disorder, it can only explain a temporary or momentary murmur, not a permanent one, such as commonly exists in chorea. Moreover, it is by no means clear, as Dr. Todd long ago pointed out (*Medical Gazette*, 1849, p. 664) that closure of the auriculo-ventricular valves would be in any degree affected by irregular action of the papillary muscles. One important point in connexion with these choreic murmurs requires to be especially noted, namely, that absence of a murmur is no proof of the absence of even serious organic disease of the valves of the heart. I have repeatedly observed cases in which the most careful examination failed to detect a murmur, even up to the last day of life, yet in which after death there were unmistakable signs of recent acute mischief about the valves. The fact is important, because it warrants us in assuming the existence of valvular disease in suspected cases, even although no murmur be heard. The explanation of the fact is very simple ; the thickening, swelling, and other changes in the mitral valve, including fibrinous depositions, were, in the cases to which I allude, and probably therefore in others similar to them, observed principally, if not exclusively, on the auricular surface of the valve, above the free margin, which was thus uninterfered with in its power of closing and preventing regurgitation. The proofs of inflammatory mischief in the valves disclosed after death are usually quite plain, and consist of swelling, alone or combined with evident vascularity, softening and loosening of texture, a rough, granulated, occasionally abraded surface, and often the presence of separable fibrinous concretions. The change in many cases, however, is so very slight, and requires such careful examination for its detection, that I am persuaded it has frequently been overlooked, and therefore has not been described as often as it really

exists. The granules, too, are frequently so minute as to be readily lost sight of, unless specially sought for. Often, too, they adhere so loosely to the surface of the valve that they may be readily brushed off in the ordinary examination of the interior of the heart, and thus not be taken into account. Although the mischief found may thus be slight, and the granular deposits few and small, yet these changes by no means represent the amount of inflammation which may have been going on during life. They represent it, indeed, no more than do the granulations on a wound after death represent the amount of discharge from the wound during life. Much evil may have resulted from continued valvular inflammation, which leaves but little sign in the degree of structural change disclosed after death.

3. Several recorded cases by Ingleby (*Lancet*, 1840), Lever ('Guy's Hosp. Rep.' 2nd ser. vol. v. and vi.), Romberg ('Manual of Nervous Diseases'), and others, leave no doubt of the occasional occurrence of chorea during the pregnant state. Some of the worst, most furious and fatal cases of this disorder have indeed occurred during pregnancy. The relation which the pregnant state bears to the chorea has not been clearly determined. Certain points of interest, however, are presented by the recorded cases, as analysed by Sée (*loc. cit.*), Romberg and others.* The chorea for example, seldom occurs before the second month of gestation, or after the fourth; in one of two instances observed by myself, however, it commenced in the fifth month, and in the other at the end of gestation. Similar instances of its late occurrence have been recorded by Ingleby and others. Sometimes, on the other hand, it begins soon after conception. From the third to the fifth month, however, appears to be the average period for its commencement (Sée). It is more common in primipara than in those who have already borne children. Also, it is more common in those who fall pregnant in early life than in those who do not become pregnant till later. From nineteen to twenty-four is the average period of life at which it occurs, according to M. Sée. In one case it occurred at sixteen, and in several others at ages between sixteen and twenty. It may occur in those who have not, as well as in those who have, suffered from the disease on a former occasion. Its occurrence in one pregnancy does not necessarily entail its repetition on the patient becoming pregnant again, though occasionally the same patient has chorea in two or three successive pregnancies (Lever and Romberg). It appears to occur independently of anything unusual or abnormal in the pregnant state, and of any attendant disease detectable during life. Once developed, it usually continues until delivery, whether this be premature, as often happens, or at the end of the natural term; it generally ceases then, but sometimes continues longer.

"Such are some of the main points noticed about chorea in pregnancy. There is, however, nothing in them to explain the connection. Accordingly, one is led to the belief that in this, as probably

* For a good discussion of the subject, consult Dr. Tanner in his *Signs and Diseases of Pregnancy*; see also, for references to most of the published cases, Dr. Charles Reeve's book on *Diseases of the Spinal Cord*.

in most other forms of chorea, more is due to the peculiar nervous temperament of the pregnant person, and perhaps to some attendant condition, than to the mere pregnancy itself. Naturally the pregnant state is one which is attended by much nervous excitement, especially when it occurs for the first time, and in young subjects, and especially, too, when it occurs under circumstances occasioning much mental distress or disgrace. This was well shown in one of Dr. Levick's cases (*American Journal of Medical Science*, January, 1862), that of a young girl who had been seduced at the age of 16. She suffered much from the consequent shame and disgrace on becoming pregnant, and soon after was seized with chorea, which killed her. The natural state of nervous susceptibility during pregnancy in young persons renders them also specially liable to be over-impressed by all causes of mental disturbance. Levick mentions one case in which the death of a friend seemed to be largely concerned in the production of the chorea ; and another in which a sudden fright developed the attack. But together with these general and special circumstances producing an undue state of nervous excitement, and rendering the subjects unusually susceptible of any additional cause of irritation, physical or moral, there probably is associated in most cases of chorea in pregnancy a peculiar predisposing tendency to nervous affections. This is shown in the fact that in many of the recorded cases there had been chorea on a former occasion ; also that on the occasion of subsequent and quite natural pregnancies chorea recurred in several of them. It may be assumed, therefore, that the choreic tendency had all along existed in those attacked, but that it required the peculiar circumstances connected with pregnancy specially to predispose to it, and, in addition, perhaps some direct exciting condition, like a mental shock, or some associated state to develop it. Fortunately, fatal cases of chorea in pregnancy are rare ; but unfortunately such cases when they have occurred have rarely been examined thoroughly after death ; hence we are deprived of much that might help to an interpretation of the association in question. The number of cases which I have found recorded being so few, I venture to append the two following to the list already published, especially since I believe they furnish some clue to the pathology of puerperal chorea, as well as of chorea in general :—

CASE 1.—A young married woman, aged 20, was admitted into St. Bartholomew's Hospital in January, 1852, being five months pregnant with her second child, and suffering from violent general chorea of about three weeks' duration. The attack had been gradually coming on for several weeks before it assumed the severity by which it was characterised on the patient's admission. She had had no similar attack in her former pregnancy, or at any other time, and had no rheumatic history. For two days the violent choreic movements continued without any mitigation, except while the patient was under the influence of chloroform, and on the morning of the third day she miscarried, lost a large quantity of blood, and almost immediately died. The points of chief interest disclosed on the post-mortem examination were the following :—The substance of the spinal cord and of the brain, especially the cerebellum, was remarkably soft, inelastic, and pale. The membranes of the brain were healthy ; those of the spinal cord were

congested, and in the loose tissue immediately outside the theca were large ecchymose-looking spots, consisting apparently of recently-extravasated blood. Similar apparent ecchymoses were found among the deep muscles of the back, on the outer surface of the heart, in the muscular tissue of the left ventricle, amid the loose tissue connecting together the great vessels at the base of the heart, along the costal pleura, and in the greatest abundance, in the tissue of the omentum, mesentery, and other folds of the peritoneum. On more closely examining these spots, especially those in the loose tissue about the base of the heart, it was found that they were not real ecchymoses, or extravasations of blood, but masses of small tortuous vessels gorged with dark, stagnant blood, which was variegated by pale, buff-coloured streaks, apparently of separated fibrin. So closely identical in appearance were the spots met with in the various parts, that there seemed no doubt of their being all of the same nature, namely, portions of extreme capillary engorgement, resulting probably from some cause of obstruction to the circulation therein.

The heart was small, flaccid, and empty. The right valves were healthy. The mitral and aortic valves, near their borders, were studded with pale, soft, loosely-adhering granules. The lungs, and the various abdominal organs, including the recently-emptied uterus and its appendages, were healthy. On various parts of the trunk and limbs were numerous large pustules, somewhat like ordinary boils. There were also several suppurating lymphatic glands in the neck, and the right mammary gland was enlarged, hard, unduly vascular, and many of the lactiferous tubes yielded a puriform fluid on section and pressure.

The pathological appearances in this case resolved themselves, therefore, into a pale, soft state of the nervous centres, as commonly found in chorea; soft, easily-separable vegetations on the left valves of the heart; numerous patches of intense capillary congestion, resembling ecchymoses, in various loose textures of the body; pustules in the skin, and suppurating lymphatic and mammary glands. Nearly all these conditions were indicative of a contaminated state of the blood. The cause of this contamination at first seemed doubtful. The patient, just before the development of the urgent choreic symptoms, had, it was subsequently learnt, cut her thumb deeply; the wound suppurred, the hand became much swollen, and at the time of her death the wound was still gaping and unhealthy looking. Had this been the source of introduction of morbid material into the blood? Possibly it had, although against it there is the fact that the lungs were healthy, and it is rarely, if ever, that these organs escape when the venous blood is contaminated by the products of phlebitis, or other similar noxious matters introduced. Another suggestion was furnished by the deposits on the valves of the heart; these afforded indications of an inflammatory state of the endocardium, which was probably sufficient to have contaminated the arterial blood and to have brought about local obstruction in the capillaries, and thus occasioned the ecchymose-looking spots. The presence of these patches of capillary engorgement about the theca of the spinal cord may have contributed materially to keep up the irritation in the nervous centres to which the chorea was due. Without, however, commenting further on this case at present, let me narrate the other.

CASE 2.—In December, 1859, a healthy woman, aged 25, who had borne one child previously and miscarried twice, was taken in labour at her own home, and sent to St. Bartholomew's Hospital for assistance. The gentleman who attended her from the Hospital found her in a state of violent chorea. She was delivered of a full-grown living child in a few hours, and the movements then partially ceased, but soon afterwards recurred with increased severity. The patient was brought to the Hospital, and died in four days,

exhausted by the violence of the choreic agitation. It was ascertained that the chorea had commenced only three or four days before parturition : also that the woman had suffered from chorea when fourteen years old, the attack at that time appearing to have been in connexion with rheumatism. The body, examined after death, appeared well nourished. The brain and its membranes were congested ; the cerebral substance tolerably firm. The spinal cord was not examined. The lungs and abdominal viscera appeared healthy. The left ventricle of the heart was a little hypertrophied ; all the valves were healthy, except the mitral, which presented signs of old mischief, in thickening and shortening of the tendinous cords, and of recent mischief, in a row of small warty vegetations along the auricular surface, just above the free margin. The uterine organs presented the appearance proper to them a week after delivery.

In this, as in the previous case, there was thus signs of recent mischief in the mitral valve. It is on this account chiefly that the case is worthy of notice. The valvular affection becomes especially significant when taken in conjunction with the fact that a similar condition of the valves existed (whenever the heart was specially mentioned) in every one of the fatal cases of puerperal chorea which I have found recorded.

ART. 33.—*On Hemicrania, or Migrain.*

By Dr. E. DU BOIS-REYMOND, of Berlin.

(*Journal de Physiologie*, July, 1860.)

The text for this paper is supplied by the personal experience of the distinguished author. The principal symptoms of an attack of hemicrania, coming on at an interval of three or four weeks, are general malaise, pain in the temporal region, gradually increasing, never passing the median line, and disappearing towards evening. Pain is increased by any cause which determines blood to the head. The temporal artery feels like a cord ; the face is pale ; the eye of the side affected is small and injected ; *the pupil is dilated* towards the termination of the attack : the ear of the side affected becomes red, and feels hot to sensation and touch.

Migrain, in the author's opinion, is a tetanus of the muscular coat of the arteries of half of the head, in dependence on the cervical portion of the great sympathetic of the side affected. The heat and redness of the ear at the end of the attack are due to exhaustion of the muscular coat of the vessel from its long contraction, the cause of the tetanus having ceased to act. The seat of this tetanus is probably in that part of the spinal cord termed by Budge and Waller the cilio-spinal centre. During and after the attack the spinous processes of the dorsal region are painful to pressure.

When the cervical sympathetic nerve of a rabbit is galvanized the animal does not cry, because the rabbit is not a sensitive animal. The muscular pain in tetanus probably depends on compression of the nerves distributed to the interior of the muscles. In the case of the arteries the cause of the pain is probably the same, being increased by the lateral pressure when from any cause more blood enters them. We must suppose, in admitting hemierania to be a neuralgia, that the sensibility of the nerves is increased. In this form of hemicrania

(for it is only a *form* of the disease) therapeutic appliances ought to be addressed to the cilio-spinal region.

Commenting upon this paper, Dr. Brown-Séquard says:—

"Migrain may sometimes be accompanied by contraction of the vessels of the brain, but the pain cannot be caused by contraction of the muscular fibres of these vessels, because the sensibility in blood-vessels is low, and in experiments on dogs and cats (which are very sensitive animals) no sign of pain is elicited where the cervical sympathetic is galvanized. Supposing the vascular nerves to be in a state of hyperesthesia, muscular compression is not the exciting cause of the pain, for, in a voluntary muscle, section of the tendon relieves the pain, though it does not remove the contraction of the muscle and the pressure on its nerves. Pressure is not the cause of pain. A galvanic excitation of the nerves of the muscles is more probably the cause. Other difficulties exist in regard to Du Bois-Reymond's hypothesis. One of these is that the eye is small and the faced pinched; these are symptoms of paralysis of the sympathetic, and not of its irritation. The irritation must be partial: if it were not, epileptic vertigo would have resulted."

In most of the cases of migrain observed by Brown-Séquard, the face, the ear, and the eye presented the symptoms of *paralysis* of the great sympathetic, and not those of irritation of this nerve.

ART. 34.—*On the Employment of Shampooing in certain Affections of the Muscular System, especially in Lumbago.*

By Dr. ESTRADÈRE, Physician to the Baths at
Bagnères-de-Luchon.

(*Journ. de Méd. et Chir. Prat.*, June 14, 1863.)

This paper expatiates on the benefits derivable from shampooing, and enters into minute particulars as to the mode of application of this procedure in the various cases in which it may be required.

Amongst other affections the author mentions *sprains, œdema neonatorum, anasarca, morbid obesity, simple and synovial cysts; atheromatous tumours of the scalp, slight contusions, spasmodic contractions and muscular luxations* are affections in which shampooing is described as most efficacious.

Whatever be the correct theory of lumbago or torticollis, "shampooing," says Bonnet, of Lyons, "is the treatment universally adopted."

Dr. Estradère adduces in illustration various cases, one of which was recorded in 1837 by Mr. Martin, sen., of Lyons. The patient, Dr. A. Petit, an eminent practitioner of that city, had appointed eleven o'clock on a certain day, to meet Dr. Martin in consultation, and at 9 o'clock sent an apology, in which he stated that he was confined to his bed by a severe attack of lumbago. Dr. Martin at once called on Dr. Petit, and offered to give him immediate relief, a proposal which, of course, was thankfully accepted.

"I placed the patient in an appropriate attitude," says Dr. Martin, "and in the course of five minutes, I succeeded in relaxing the

partially and irregularly contracted muscular fibres and in restoring full liberty of movement. Dr. Petit dressed, and was enabled to accompany me to the house of our common patient."

On another occasion, Dr. Martin relieved, *in ten minutes*, a man of a lumbago which had kept him confined for a week, and for which an *Officier de Santé* had prescribed two large blisters. As this gentleman declared himself entirely incredulous of the good effects of shampooing, Dr. Martin slyly caused the patient to call on him at once in order to return the now useless vesicant plasters.

In lumbago, all the muscular structures, from the neck to the sacrum, must be well rubbed, softly at first, and in a gradually more vigorous manner, with the hand, brush, or hair-glove. The frictions should be performed in every direction, vertically, obliquely, and spirally; digital pressure should be applied to every spot, and the operation be concluded by percussion with the hand or a wooden pallet. The patient should then perform the different movements of the spine, which are seldom painful when shampooing has been thoroughly performed.

ART. 35.—*On Nightmare.*

By DR. THOMAS HODGKIN.

(*British Medical Journal*; and *Dublin Medical Press*, June 10, 1863.)

The following remarks by Dr. Hodgkin, himself a not unfrequent sufferer from nightmare, form, as it would seem, an important contribution to the true history of this distressing affection. After referring to some of the symptoms, Dr. Hodgkin says:—

" Of later years, I have observed that waking has not so completely done away with the conditions on which the nightmare depends, but that the mind, when recalled to perfect consciousness, has had sufficient opportunity to analyse them; and a wakeful companion, interested in averting or arresting the attack, has, by recognising the premonitory symptoms, been able to prevent or cut short the paroxysm.

" By examining the state of the pulse and heart as soon as consciousness reminded me that the inquiry was to be made, I became satisfied that no material derangement could have taken place in that quarter. At a later period, I noticed some partial condition of the limbs somewhat resembling that which is felt when a part is said to be asleep, but to a minor degree, and without the peculiar sensation called pins and needles. As the duration of the waking symptoms increased, I became struck with the fact that the involuntary movements of respiration seemed to be suspended, whilst the chest seemed to be passively collapsing from elasticity and other causes. I was naturally desirous to have the paroxysm terminated by being awakened as soon as abortive efforts at articulation called attention to my distress; but I noticed that this kind attempt at first rather increased than mitigated the suffering, if it tended in any degree to favour the collapse of the chest, as in the case of the hand being placed upon it. On the contrary, the most

prompt and effectual relief has been obtained by so moving the arms that the pectoral muscles might elevate the ribs; and it is now some years since I have begged that one arm might be worked like the handle of a pump, which completely agrees with the theory and practice which have of late been ably advocated by Dr. Silvester in relation to the treatment of suspended animation from asphyxia. Reflecting on these symptoms, I recollect the views of the late Sir Charles Bell regarding the involuntary movements of respiration, and the doubts which I had entertained as to a particular part of the spinal cord, with the nerves emanating from it, being specially devoted to this part of the respiratory function; and I felt almost compelled to subscribe to his doctrine, the strongest argument in favour of which seemed to be supplied by the fact that when, in the state which I have described to exist, on waking in the paroxysm, I have made forced voluntary efforts at inspiration by raising the ribs to expand the chest, the diaphragm, instead of simultaneously descending, was, on the contrary, elevated by the pressure of the atmosphere on the abdomen—a result which would hardly have taken place had the normal provision for the co-operation of these parts been in working order. I felt persuaded that, if the state which I have described were not relieved by the early waking of the patient or by the efforts of assistance opportunely at hand, death must be the consequence. It is probable that persons who have been found dead in their beds may have so perished; and verdicts of death from affection of the heart may have been recorded in consequence of the distended condition of the right cavities.

* * * * *

“Having commenced but not completed committing these reflections to paper before starting for a journey on the Continent, I have had an opportunity of conversing upon the subject with my friend Dr. Foville, whose attention is well known to have been long turned to the anatomy, physiology, and pathology of the brain and nervous system, and whose abandoning of the completion of his work is a grievous loss to our profession. The Doctor, after patiently hearing my statement, was so far from rejecting my ideas, that he related a case tending to confirm them. A patient of his, labouring under some form of paralysis which ultimately occasioned his death, complained of being distressed with nightmare on falling asleep. The Doctor, having an opportunity of watching the approaches of the paroxysms, observed that his respiration became interrupted, and then suspended, which resulted in his waking up in agitation and fright. Attention to position in his sleeping state to some degree, but imperfectly, prevented the paroxysms. Dr. Foville further told me, in reference to what I have said regarding the eighth pair of nerves, that Professor Blainville had made some experiments on the section of them, in the course of which he observed that the death of the animal was accelerated if it were placed on its back, but retarded by the chest being downwards, as when it is in the standing position; which seems to coincide with the need to facilitate and maintain the voluntary efforts at respiration.”

ART. 36.—*Case of Acute Myelitis, in which Recovery
was materially assisted by Cod-liver Oil.*

By Dr. RADCLIFFE, Physician to the Westminster Hospital.

(*Lancet*, October 31, 1863.)

Acute myelitis, there is reason to believe, was the most prominent, though not the exclusive, disorder in this case; at any rate, this case affords an instance, almost unique, of recovery from an acute disease of the spinal cord of the very gravest character, and an illustration, as it would seem, of the good which may result under similar circumstances from the employment of cod-liver oil.

CASE.—George D—, aged thirty-three, a groom, admitted under Dr. Radcliffe into Burdett ward, June 17th, 1862. A well-made, moderate-sized man, of florid complexion and sanguine temperament; features unsymmetrical; mouth drawn to left side; no winking movement in right eye; pupils natural, equal, and properly responding to light; head somewhat hotter than natural; breathing chiefly diaphragmatic; pulse 120, fairly strong; extremities, especially lower ones, cold; tongue protruded to right side, moist and pasty. Complains of pain in the back, from about the third lumbar to the first dorsal vertebra; of loss of power of movement in both lower extremities, accompanied with partial loss of sensation; of partial loss of the power of movement in both arms; but not of any feeling as of a cord around the abdomen. Complains also of sleeping badly. Speech rather thick and drawling; manner rather irritable; memory unimpaired. Pain in back increased on the application of a hot sponge. Lower extremities somewhat numb, but painful to the touch, and even to pressure of the bedclothes. No difference in temperature of the legs; right leg perfectly paralysed, the left leg can be moved slightly with a strong effort. Upper extremities somewhat numb, and power of movement considerably impaired; inability to grasp forcibly with either hand. Cannot tell when the little toes are pinched; feeling retained in the other toes; no reflex action produced by tickling the soles of either foot. Impressions can be felt more clearly on the right (paralysed) side of the face than on the left, but no well-marked difference of temperature on the two sides. No intolerance of light or sound, or but the very least; no diplopia. While talking to him his countenance became greatly flushed and the surface of the trunk hot; and he says that he often "comes over in heats and sweatings." Appetite moderate; no difficulty in deglutition. Bowels constipated; no tympanitis. Micturition natural; urine clear, acid, dark straw-coloured, and, in short, natural; chlorides present in fair quantity.

Previous History.—On June 6th (ten days ago) he was seized with sharp pain in the back and in the calves of the legs, the former pain reaching from low down in the loins up to the root of the neck. On the 8th he was able to walk about, and the walking seemed to distract his attention from the pain. Next day he was obliged to give up work and take to his bed. On the 13th, one of his companions noticed that his face was awry, and on making further inquiry he found that he could not close the right eye; patient observed that the right half of a cup from which he was drinking felt larger than the other half. Twenty years ago he fell from a tree and alighted upon his back, but in a week was "all right," and since that time has never felt any ill consequences from the accident. Was never seriously ill. Is moderately steady. Has been a widower three years and a half, after being married nine years. Denies all intemperance in sexual matters.

Dr. Latham, who admitted the patient in Dr. Radcliffe's absence, ordered cupping at the loins to the extent of four ounces, and a draught of the liquor of the bichloride of mercury in decoction of cinchona three times a-day.

June 18th.—Slept badly; pain in back somewhat relieved. A blister, four inches by two, to be applied to the nape of the neck.

19th.—Very thirsty; back painful. Pulse 120; respiration 20, and chiefly diaphragmatic.

20th.—Slept indifferently well. Complains of pain on each side just above the hips. Has complete power over the bladder, and the urine is normal; but passes motions under him in bed. Has to be moved every half hour or so, on account of the pain in the back becoming greatly increased if he remains long in one position. Great pain is experienced if he makes any attempt to move himself.

Dr. Radcliffe took charge of the case to-day, and ordered six ounces of brandy in the course of the day, and five minims of solution of acetate of morphia every four hours.

21st.—Pulse 120; respiration 24. No reflex action on tickling the soles of the feet. Lies with the knees flexed, and with a pillow under the hams to relieve the aching pain in the calves. Cannot tell which toe is pinched, though he feels something. Has no appetite; is very thirsty; and has profuse night-sweats.

22nd.—Slept well. There is a slight excoriation on the inner side of the right thigh; he feels the legs warmer, and thinks he has more power over the right leg.

23rd.—Complains of aching pain in both arms and in the right ankle.

24th.—Facial paralysis manifestly improving; can almost close the right eye; tongue protruded with scarcely any deflection. "Pins and needles" felt in both arms; the latter are cold to the touch, but he says they feel to himself warm rather than cold. A purgative enema ordered.

25th.—Back more painful; cannot tell which toe is pinched. Asks for a mutton chop.

26th.—Legs ached very much last evening.

30th.—Pulse 96; much more power over the legs, and much less pain. To continue the morphia.

July 2nd.—Power in the legs increasing; sensation of numbness and "pins and needles" in the hands occasionally present.

7th.—Legs feel numb and cold to the patient, and are very tender and painful to the touch; more power of movement in the legs, and also in the arms.

13th.—Dr. Fincham saw the patient for Dr. Radcliffe, and added a twenty-fourth of a grain of strychnia to the morphia draught.

15th.—Scarcely any trace of facial paralysis. Yesterday and the day before the man sat up in bed for a short time, and got into the position without help.

20th.—Strychnia increased from a twenty-fourth to a sixteenth of a grain.

22nd.—Legs ache very much; tongue put out straight, but right eyelids not quite so much under command as they were a few days ago. Appetite indifferent.

28th.—Back painful; legs also painful and sore to the touch; muscles of the extremities, particularly of the legs, very much wasted, but much more power of movement. For two or three days the patient has got up with assistance, and remained sitting in a low chair several hours a day. Turpentine stupes applied to his back.

Aug. 5th.—Progressing, but very slowly, in a right direction. Dr.

Radcliffe ordered him to discontinue the morphia and the strychnia, and to take more meat, and three drachms of cod-liver oil thrice a day.

8th.—The oil causes some nausea, but it is persevered with; gets up daily; bowels act now without enemas; power over the right eyelid recovered, and all signs of facial paralysis at an end.

12th.—Considerably better in all respects. To have full diet and a pint of porter.

18th.—Much stronger; can now get out of bed without assistance, but cannot stand alone; knees very stiff; sits up several hours every day. Appetite good.

27th.—Can now bear his weight on his legs if he steadies himself against anything. To have galvanism applied.

30th.—The galvanism (the continuous and interrupted current were both tried) could not be borne, as it caused so much pain, even in feeble currents; can now stand without any support. Cod-liver oil to be increased to four drachms.

Sept. 9th.—Legs less painful. With the aid of a stick he can now walk about the ward.

14th—Went up stairs to chapel.

16th.—Went out for a walk.

18th.—Leaves to-day for the country. He still takes the cod-liver oil, and he says that it warms and strengthens him. Circulation still very defective in the hands and feet, which are generally cold and somewhat livid; calves of the legs still sore and painful on pressure; no pain whatever in the back, even on percussing the spine somewhat roughly with the knuckles; the nutrition of the wasted muscles improving.

Nov. 11th.—Since last report he has been staying at St. Albans, Herts, and came to-day to report himself. Can now stand or walk about all day long without the least fatigue or inconvenience, and feels strong and hearty. General condition much improved.

Dec. 5th.—Again came to show himself. He says that he is now quite well, and that he is looking out for a situation.

ART. 37.—*Case of Incipient "Wasting Palsy" Cured.*

By Dr. J. RUSSELL REYNOLDS, Physician to University College Hospital, Special Professor of Clinical Medicine in University College.

(*Lancet*, July 11, 1863.)

W. J—, a married man, aged thirty; height, five feet six inches; weight, eleven stone ten pounds; of good muscular development; pale complexion; unimpaired general health; the subject of no known hereditary disease; free from gout, rheumatism, or syphilis; daily working, in a high temperature, at the teasing rather than laborious occupation of piano-forte "regulation;" of temperate habits, and accustomed to exercise himself in an open-air gymnasium—on December 27th, 1860, fell backwards, while skating, and struck the back of his head; but immediately got up again, felt slight "heaviness of head," but nothing else, and went on skating. Early in February, 1861, a fellow-workman said to him, "your eye is not right," and W. J— found, upon looking in a glass, that the left pupil was much larger than the right. Vision became impaired three days later, and to such a degree that he could make no reliable use of the left eye. It appeared, he says, "all pupil, and looked like the eye of a dead fish." A week

later he felt acute pain at the back of his head, with a sense of great weight inside the skull. Brushing his hair caused great uneasiness.

In April, 1861, he became an out-patient of University College Hospital. The left pupil was much larger than the right, there was constant pain in his head, great pallor of the skin, but no muscular or sensorial change. In July he was well.

Towards the close of September he felt slight pain in the left arm and shoulder, and this he at the time called "rheumatism." After it had lasted for some days he was exposed for several hours to cold wind and rain, which especially drove in upon his left side, during a day's rifle practice at Portsmouth. Three or four days later his arm felt "unusual" and "weak." In rowing he could not keep the boat straight, but pulled it round to the left side. Unless making some considerable exertion of this kind he was, for about a week, not conscious of anything being wrong; but afterwards he found that his arm became gradually more feeble; that he could not get his elbow away from his side, although when resting the elbow he could use the left hand perfectly; that he had difficulty in dressing himself, and after a little time was unable to accomplish this process without help.

Oct. 15th, 1861.—Again became an out-patient of University College Hospital. He is pale, but fairly nourished; lips red; he has no general uneasiness, nor local pain, except occasionally, at night, in left shoulder; no oedema of ankles, no blue line on gums, no eruption on skin, no headache, no joint affection. He has perfect use of all his muscles but those of the left arm and shoulder, which are thus affected:—He cannot move the arm outwards to the very slightest degree; but can just stir it a little backwards and forwards. If raised by observer it drops heavily to the side; there is no rigidity; and passive movement is painless. He can lay hold of his left wrist with the right hand and move it anywhere without the least discomfort. He has no power to flex or extend the forearm. He can pronate or supinate the wrist; he can flex or extend the hand and fingers readily and freely, but the grasp of the hand is notably weaker than that of the right. There is marked wasting of the muscles, so that the acromion appears sharply prominent. The deltoid, biceps, triceps, and pectoral muscles feel soft and flabby. None of them exhibit any contraction upon percussion, nor do those of the other side. No fibrillar vibrations are visible: all the muscles of the left arm and forearm exhibit electric contractility; but the biceps and deltoid much less than the muscles of the forearm; the anterior and middle bundles of the deltoid much less than the posterior. The deltoid cannot be stimulated to contract so much as to affect the position of the arm; but a strong current (intermittent) applied to the biceps produces slight movement of the forearm. These movements are painless. The differences in size, ascertained by measurements at several points, vary from half an inch to an inch in the circumference. The temperature in the left axilla is 2° Fahr. lower than in the right; that of the deltoid 3°; that of the biceps identical. The sensibility of the skin is normal.

An intermittent current was applied daily, and very carefully, by Mr. Herbert Taylor, who found the muscles more sensitive on the 19th; and on the 23rd the biceps very acutely sensitive; the contractions of the muscles being more frequent and stronger.

30th.—Nutrition of muscles much improved, but power and temperature as before.

Nov. 9th.—Paralysis as at first report, but nutrition notably increased, and electric irritability much greater. On applying a continuous current through the deltoid and biceps, he was able, in a few seconds, to raise his hand, quickly and strongly, to the level of the ensiform cartilage.

19th.—Continuous current was applied daily from the 9th to the 18th,

but without any appreciable effect. The interrupted current was again resorted to, and on the 21st he could lift his hand to his mouth, and take a light object from off the mantel-piece.

23rd.—Electricity discontinued on account of extreme pain in the arm; and on

Dec. 6th it was found that he had lost much of the power that he had gained in November. Temperature as before. Various applications of electricity were made without any good effect, and it was noted, on

Jan. 15th, 1862, that the arms appeared equally developed, right and left, but that the power of movement was as before. The thirtieth part of a grain of acetate of strychnia was now given three times daily, and in the course of a fortnight the arm was well.

Since this time I have frequently seen W. J—, who has retained fully the strength and usefulness of his arm. Upon two occasions he has suffered from pain in the head and dilatation of the left pupil, but these symptoms have rapidly yielded to treatment.

The bearing of this case upon the clinical history and pathology of "wasting palsy" may be briefly stated thus:—

Since the loss of power did not depend solely upon the impaired nutrition of the muscles, and the muscular tissue was not primarily affected in W. J—, it may be inferred—

1. That neither the muscular tissue nor the ganglionic system of nerves was the starting point of morbid change.

As muscular and cutaneous sensibility and electric contractility were persistent; and they, with the nutrition, speedily became, under treatment, either normal or exaggerated, while voluntary power remained in abeyance, it may be presumed—

2. That the function of the nerve-trunks was not destroyed, and that the seat of "wasting palsy" was not in them.

Since the palsy was preceded and has been followed by signs of disturbance in the cerebral functions, it is to be inferred—

3. That the affection had its remote origin in the injury inflicted upon the head.

But as there was marked diminution of electric contractility and sensibility, and of nutrition, and moreover as the paralysis was in the upper portion of the affected limb, it may be presumed—

4. That loss of cerebral function was not the sole cause of symptoms.

Since the nutrition, contractility, and sensibility were diminished, but not lost, while voluntary power was entirely abolished, it may be concluded—

5. That the central functions of the medulla spinalis were, *pro tanto*, diminished, and its conducting property was in abeyance; and that, in the impaired nutrition of that organ we must seek for the essential fact in "wasting palsy."

ART. 38.—*On Ephemeral Mania.*

By Dr. J. C. BROWNE, Assistant Physician to the Derby County Asylum.

(*Psychological Journal and Medical Critic*, January, 1863.)

Ephemeral mania, according to Dr. Brown, consists in a transitory isolated attack of mental disturbance, usually not exceeding forty-eight hours in duration, and which is apt to be confounded

with ordinary general mania—which malady it very closely resembles in many particulars. The brevity of its continuance, however, separates it widely from mania proper, and renders it quite unnecessary that those suffering from it should be removed to an asylum. Indeed, any such removal would be prejudicial to those afflicted with mania ephemera; for upon recovering themselves and awakening as from a troubled dream, they would obviously incur great risk of relapse or of regression into some more permanent affection from the shock at finding themselves in such a place, from the vexation and chagrin inseparable from a realization of their true position. It is, therefore, of much consequence to recognise this disorder, which is capable of easy cure at home, which is so fleeting and evanescent, and in which the mind is not overthrown nor even gravely damaged; for whenever the tyranny of the attack is overpast, with wondrous elasticity the mind springs up and regains its former stature and rectitude.

The causes of mania ephemera are very various. Debilitating influences, such as deficient nourishment, impurity of the atmosphere, sedentary habits, confinement, and lack of exercise, exhausting exertion of mind or body, but especially of the former, unhappy circumstances, previous disease of a weakening or nervous character, excessive indulgence in stimulants, and hereditary proclivity to disease, are all powerful in predisposing to it, as to disease in general. These causes are particularly potent when operating upon a nervous temperament. Excessive mental emotion is pre-eminently an exciting cause. Grief, surprise, fear, anger, or joy, is a usual precursor. A man may be frightened to madness as well as to death. This madness may be of no temporary kind, but it is nevertheless true that the great majority of instances of temporary insanity may be traced to overwrought feeling in its corporeal relations. It is, indeed, characteristic of ephemeral mania that its immediate cause is almost invariably obvious and prominent, and not, as frequently is the case in other varieties of mental alienation, hidden and impereceptible, quietly, stealthily undermining bodily functions and mental powers, unrecognised even by watchful onlookers, except in the catastrophe which it has brought about. It is further characteristic that the cause is generally quick and sudden in its operation, not slowly progressive, but rapidly culminating in mental derangement. The more violent passions, ungoverned bursts of temper, unexpected sorrows, family dissensions, reverses of fortune, bitter disappointments, agitating joys, novel and powerful religious impressions, are most prolific exciting causes, and these acting in combination with certain predisposing and physical circumstances, bring about a temporary perturbation of the mind, just as with predisposing and physical circumstances of another description, they might entail more lasting disorder. Indeed, ephemeral mania seems generally to consist essentially in an alteration of the cerebral circulation, following upon some kind of over-excitement of the emotions.

CASE.—F. F., at 50, a small farmer, of nervous temperament, was brought to the Derby County Asylum in a strait-waistcoat, his legs being secured by ropes. His body was marked with several extensive bruises in consequence of the coercion to which he had

been subjected. He was shouting aloud short incoherent sentences, uttering imprecations against those around, whom he seemed to suspect of conspiracy against him, and struggling violently to be free. He did not answer the questions put to him, but continued to cry out and to cast furtive glances about him. He appeared to be in weak bodily health; his pulse was 100, but feeble and thready, his face flushed, his head hot, his tongue coated with a white fur; respiration hurried. The pupils were slightly dilated, but sensitive to light; the muscular movements were tremulous. General and special sensibility were normal, as far as could be ascertained. The history of the case was elicited as follows. F. F. had suffered much grief and anxiety on account of the undutiful and cruel conduct of his children, also from business reverses; and after a domestic quarrel, twenty-four hours prior to his admission, suddenly became insane. His insanity was manifested by sudden maniacal excitement and incoherence. He had stripped himself to his shirt, seized a crow-bar, rushed from his house and down the public street, threatening to murder any one who approached him. It was with the utmost difficulty he was overpowered and restrained. He had been sleepless and had continued raving wildly all night. He never was insane before, and never had any relatives insane. Immediately on his admission he had a warm bath and a mild purgative. He had not been an hour in the institution before he became comparatively rational. At his own request he retired to bed. He at once fell into a placid sleep, and on his awakening in the evening, no trace of insanity was discoverable in him. He has since continued quite well. He has but a very dim recollection of all that transpired during his excitement.

The symptoms of mania ephemera are invariably modified by the period of life and circumstances of the sufferer. When appearing in females, produced by influences operating through the generative focus of the coenæsthesia, they usually partake of an hysterical character. The rapid evolution of the sexual organs and functions, or the derangement of these, sometimes induces morbid mental activity. Illustrative of this is the following case, with remarks, translated from Marc:—

"A female, subject at each catamenial period to mental disturbance, encountered, while thus affected, one of her own sex, whom she grossly insulted, in the presence of another person. The aggrieved party complained; the aggressor denied the fact, and the judge accepted her protestations of innocence upon oath, which was made in good faith, as she could recall nothing which occurred during these paroxysms of excitement. The complainant was found liable in expenses; but, discovering the witness of the injuries to which she had been exposed, and her declaration having been admitted, the falsehood of the original oath became evident.

"In consequence of this, Professor Berends, Frankfort sur l'Oder, was called upon to answer the following interrogatory:—Is the state of the accused such as to admit that her paroxysms of anger are such that she cannot recall what takes place during their continuance?

"The report of the Professor was to the effect, that he had attentively studied the documentary evidence, and that he had personally, and in the presence of another medical man, investigated the sanitary condition of the accused. Surgeon L., who had professionally attended the woman, assured him that on the arrival of the menstrual period, and during the discharge, she was constantly attacked with an orgasm and cerebral congestion, with febrile acceleration of pulse, and that the exacerbation was ordinarily so violent as to be attended with delirium. During the epoch she became very irascible and subject to paroxysms of furious anger: her own statements corresponded closely with those of her medical attendant."

ART. 39.—*On Spiritualism as a Cause of Insanity.*

By M. BURLET.

(*Medical Critic and Psychological Journal*, July, 1863.)

The article from which the following quotations are taken is the translation of a memoir originally published in the *Gazette Médicale de Lyon*, and recently brought out as a separate *brochure* in Paris. M. Burlet says:—

"Lyons, for its part, has already furnished a fine contingent of madmen from spiritualism. This city, where intellectual and other juggleries have always obtained a very happy success, has become, as it were, the stronghold of the sect. According to the avowal of a medium of Brottreaux, the number of his adherents has within eighteen months been prodigiously augmented. 'Lyon' (says M. Figuier), 'with its heights, the ridge of the Croix-Rousse and the summits of the Fourbières, represents admirably what the spiritualists call a fatidical place.' Thus, it is not surprising that this city, which, at the end of last century, built a temple to the great thaumaturgist Cagliostro, accepts readily the celestial words with which the spirits daily favour it. The partisans of spiritualistic ideas maintain, without proof, that their doctrine is incapable of producing mental alienation. Nay, one of them even pretends that spiritualism is a sure preservative against insanity.

"My object is to prove that spiritual practices act as a direct and efficient cause of insanity, and, consequently, that spiritualism ought to have a place among the causes of mental maladies. For several years, the Hospice of Antiquaille, Lyon, and other special establishments of the department of the Rhône have given refuge to a great number of unfortunates become mad from having sought for *mediumnity*. From among these I derive my observations.

"These cases are not all that could be brought forward to prove the danger of spiritualism. Other special establishments of the department have received a good number of lunatics whose lunacy admitted of no other explanation than frequenting mediums. Dr. Carrier within a short space of time, has treated, and seen recover, among his patients three females who had been rendered insane by

spiritualism. I would reply here to a remark which might be made, that I have only met with spiritualistic lunatics among the more humble classes of society. This is true, because those patients received at Antiquaille, in the immense majority of cases, if not always, are the poor and indigent. But, independently of the names cited towards the close of this paper, I know from trustworthy sources, that the gates of a well-known *maison de santé*, principally resorted to by the rich, have admitted within its walls victims of spiritualism from among the aristocracy. It may be said that, having regard to the number of those who study and practise intercourse with mediums, the number of lunatics is very restricted. This opinion is not well grounded; the lunatics from spiritualism are not solely those whom it is found necessary to confine in an asylum. There are many, and of these I know many, who although they have not reached the same condition as those whose histories I have related, still give proofs daily of being more or less stricken in their intellectual faculties.

"In America, the country which gave birth to this delusion, and where it is in great favour, the number of cases of mental alienation occasioned by it is prodigious. An United States' journal declared in 1852, 'The majority of the mediums become haggard, idiots, mad, or stupid; and it is the same with many of their auditors. Not a week passes in which we do not hear that some of these unfortunates destroy themselves by suicide, or are removed to a lunatic asylum.'

"In France, individuals belonging to the upper classes of society also become victims to the destructive power of spiritualism? An advocate of Paris, Victor Hennequin, who placed himself in relation with the soul of the earth by means of tables; and who, under the influence of spiritualism, wrote the opuscule entitled *Sauvons le Genre Humain*, died in a lunatic asylum, after having placed his wife, who became a lunatic from the same cause, in another asylum. A distinguished man of science, Girard de Caudemberg, a civil engineer, died also lunatic in 1858, after having published a spiritualistic book, entitled *Le Monde Spirituel*. Among all classes of society spiritualism has found adepts and victims, and, unhappily, the prediction of the journal just quoted has been fully realised.

"The causes of the propagation of spiritualism are the same, modified by the manners and knowledge of our time, as those under the influence of which grew and were propagated in former ages many analogous intellectual epidemics, such as the demonolatry in Lombardy in 1504, in Lorraine in 1580, in the Jura in 1598, in Spain in 1630; and the vampirism in Poland, Hungary, and Moravia, from 1700 to 1740. Scarcely three years have elapsed (1859) since an epidemic of hystero-demonomania was observed at Morzine (Haute-Savoie), as reported in the *Gazette Médicale de Lyon*, by Dr. Arthaud.

"'This love of the marvellous,' says M. Figuier, 'is not peculiar to our epoch; it is of all times, and of every country, because it appertains to the human mind. By an instinctive and unjust distrust

of his own powers, man is led to place above himself invisible powers, exercising themselves in an inaccessible sphere. This natural disposition has existed at every period of the history of humanity, and invested, according to the period, the place, and the manners, with different aspects, it has given birth to manifestations variable in their form, but at the bottom identical in principle.'

"If, in other parts of France, cases of insanity induced by the doctrines of the mediums, are as frequent as in the department I dwell in, no reason to the contrary existing, it seems to me that there can be no doubt that spiritualism should rank among the most fruitful causes of mental alienation."

ART. 40.—*On the Use of Digitalis in the Treatment of Insanity.*

By Dr. C. L. ROBERTSON, Medical Superintendent of the Sussex Lunatic Asylum, Hayward's Heath.

(*British Medical Journal*, October 3, 1863.)

After some preliminary remarks upon the history of the use of digitalis in the treatment of insanity, and the physiological action of digitalis on the cerebro-spinal system, Dr. Robertson proceeds to state his own practical experience with regard to the medical use of this drug in the treatment of insanity:—

"a. *Dose and Method of Administration.*—With a wholesome fear of a coroner's inquest, I have not ventured on half-ounce doses, and I can report nothing as to their effect. I believe they would be too much for the average stamina of our patients. I have never given more than drachm doses; and I have usually found two or three days of such doses three or four times a day brought on the poisonous symptoms of the drug, with intermittent pulse, great reduction in frequency, and oppressive nausea. The respirations were also reduced in number; and the specific gravity of the urine lowered, and, so far as I know, the quantity increased by the use, in drachm doses, of the tincture. Thus, in a case of general paresis, in the second stage of mental alienation, on which I made some observations last November, the following results were shown:—

	Hour and dose.	Pulse.	Urine.	Respiration.
" November 15.	9 A.M. 5j	81	1022	28
	12 NOON 5j	67		26
	3.30 P.M. 5j	76		28
	8 P.M. 5j	69		26
November 16.	9 A.M. 5j	81 intermit.	1009	26
	12 NOON.	Patient complained of headache and pain at cardiac region. No medicine.		
	2.30 P.M. 5j	94 intermit.		30
November 17.	6.30 "	80 "		26
	9 A.M. 5j	80 regular	1017	23
	7 P.M. 5j	72 regular		27

"Under this treatment, all the maniacal symptoms present had

yielded. The treatment was kept up with half-drachm doses twice or thrice a day for two or three weeks to the entire and permanent relief of all cerebral excitement.

" This and similar experiments led me to fix my average dose of the tincture at half a drachm, although I often for the first few days of treatment give drachm doses. I have never given larger doses. I have always given it simply in water; and I have not complicated my observations by the admixture of any other drug.* The tincture has been supplied to me by Messrs. Taylor, of Verc Street, Oxford Street.

" *b. Forms of Insanity in which Digitalis has been employed.*—I have, during the last year and a half, exhibited digitalis in the form of the tincture in twenty to thirty cases of maniacal excitement, recent and chronic, with varying results.

" First, as to the failures. In three recent cases of mania depending on uterine excitement, two in young girls and one at the change of life, I steadily pressed the use of the drug until its poisonous effects, as shown in sickness and vomiting and intermittent pulse, were produced. The dose given was, in each case, half a drachm of the tincture three times a day. The result was simply that the patients when very sick were quiet, and that so soon as the nausea passed off the excitement returned. Again, in two severe cases of recurrent mania, I only produced sickness and depression of the pulse, and no amendment of the mental symptoms followed this physiological action of the remedy.

" On the other hand, my success with this drug in cases of general paresis, in the second stage, that of mental alienation with symptoms of maniacal excitement (and in which so often in private practice aid is sought pending the patient's removal to an asylum), leads me to regard its action in controlling cerebral excitement, as quite specific. I have, of course, had my share at Hayward's Heath of these troublesome cases—and how noisy and wearing they are every asylum physician knows to his cost—and they have ceased to give any trouble under the culminating action of digitalis.

" It is with these cases of general paresis, in the stage of mental alienation with maniacal excitement, that the assaults and injuries in asylums (which from time to time unfortunately occur) arise. There is such a reckless violence present, on which no moral or physical obstacles make the slightest impression, and this stage lasts so many weeks, if not months, that any remedy at all capable of controlling this state of things deserves a most careful trial. And such a remedy, I believe, we possess in digitalis, continued steadily day by day, while the tendency to excitement lasts, in half-drachm doses two or three times a day, or oftener.

" It acts in every case of the kind in which I have given it as a

* In many cases of chronic mania, with sleepless noisy nights, I have found the following sedative mixture of value.

R. Tincturæ digitalis, tincturæ cannabis Indicæ, liquoris opii (Taylor), etheris chlorici, singulorum uncias tres.

Dose—half a drachm, repeated at intervals of three hours.

specific, calming the excitement, and enabling the patient to pass without wear or irritation through this stage of the malady. Its action has been to steady the pulse, and thus apparently to supply the brain better with blood, and so to obviate the tendency then existing to effusion of serum, consequent on the inflammatory process going on, as we believe, in this stage of the disease in the arachnoid and pia mater. The researches of Wedl, quoted by Dr. Salomon in his able paper on general paresis, are conclusive as to the inflammatory process present in this stage of the disease.

"In such circumstances the only visible result is mental quiet, and the action of the drug appears to be that of a cerebro-spinal narcotic. The functions of the stomach and bowels are not affected by its use; the appetite rather seems to improve. The pulse often remains unaffected for weeks under the use of half-drachm doses, and the only result is the specific action on the cerebral excitement. I have often found one day's intermission of the medicine bring on all previous symptoms of excitement. I have prepared a detailed history of six cases of general paresis which I have thus successfully treated. The limits of my present communication necessarily prevent my inflicting their detail on you; moreover, every member of this Association has such opportunity of testing the results of my experience, that it is sufficient for my present purpose thus generally to indicate the forms of insanity in which I advise the use of this drug.

"I have also continued for many weeks with benefit to administer half-drachm doses of the tincture of digitalis in cases of chronic mania, with noisy and destructive habits. I have at this moment two such cases under treatment. In one the irritation is evidently depending on impending paralysis.

"There is a third form of insanity—mania with phthisis (not unfrequent in private practice also), in which I have found the occasional use of the tincture of digitalis of great benefit. This form of mania has been so exhaustively treated by Dr. Clouston in the *Journal of Mental Science* for April, 1863, that this reference to its treatment will for my present purpose suffice. Time, moreover, warns me to bring my present remarks to an end."

ART. 41.—*On Bloody Sweating from the Head in Dementia Paralytica.*

By Dr. F. SERVAES, Physician to the Asylum at Lindenburg.

(*Allgemeine Zeitschrift für Psychiatrie*, Band xx., 1863; and
Journal of Mental Science, October, 1863.)

Within the last two years Dr. Servaes has had the opportunity of observing two cases of bloody sweat on the head in paralytic dementia, and he now publishes them as unique, so far as his information and reading extend,

CASE 1.—F—, a long time insane, with widespread muscular paralysis, rendering the speech unintelligible. Congestion of the head, with increased heat, was a frequent and severe symptom, and accompanied with a very quick but always small pulse. Ice was used to the head, and the attacks subsided in a few days. "On one day I observed a large number of drops

of blood, clotted, on his face, which looked as if it had been sprinkled with blood." On washing this off, fresh blood exuded from other points, like as from the prick of a needle, and after two hours the face was again generally bespattered.

Whilst this went on the countenance was red, the temperature of the head elevated, and the pulse 120, but small. In two days the oozing of the blood ceased, and in some points, where the escape had been more free, there appeared circular roseola-like spots.

Subsequently, congestive attacks of the head supervened, but no more exudation of blood was noticed prior to his death. Eight days before death inflammatory swelling seized on the right hand, followed by the production of large blister-like vesicles and gangrenous spots. At the same time rapid effusion and gangrenous sores appeared over the sacrum. On a post-mortem examination a considerable serous effusion was found within the dura mater over the right side of the brain, with shrinking of the right hemisphere. The further examination of the brain was delayed, and the viscera placed in spirit; but when afterwards examined, it was so soft as to break down under the slightest pressure, and no further lesion than that named was made out.

CASE 2.—A. V.—was received, on the 9th of May, from Siegburg, as an incurable. Was much emaciated, and the muscular paralysis so great that walking was impossible, and she was confined to her bed. The skin was dry, and much disposed to the production of bed-sores, particularly as the patient was restless in bed and dirty in her habits. She was constantly calling out and crying, and tore clothing and bedding with her teeth. Her craving for food was extreme.

Between the 20th and 31st of July, fifteen to twenty drops of blood were met with on the face, behind the ear, and on the hairy scalp; almost all on the right side, on which also there were three boils. On washing them off many again reappeared; but this happened more slowly than in the other case, and it was twenty-four hours before they became as widely diffused as at first. On the arrest of the effusion, roseola-like spots appeared for a few days, and then vanished. The temperature of the head, and particularly of the body, was reduced during this period; and the pulse became only 42 in the minute, small and thready. Consciousness very feeble. A large bed sore shortly afterwards formed on the sacrum; and on the 13th September sudden collapse occurred, and death in thirty-six hours. A post-mortem examination was made forty-two hours after death.

The rather thick scalp showed posteriorly several oozing points. On opening the cranium the dura mater was found loose and fluctuating from fluid beneath it, and on cutting through this membrane several ounces of straw-coloured, turbid serum escaped. It was now evident that the right hemisphere was much shrunk, so as to leave an interval of half an inch between the bones and its surface, whilst a number of easily torn adhesions extended between the two anteriorly, as well as between the cerebral surface and tentorium. A considerable quantity of bluish serum escaped from the spinal canal. Water was also present in the subarachnoid spaces, penetrating between and widening some of the cerebral sulci. The arachnoid was milky in aspect at the base of the brain and over the cerebellum. The blood-vessels of the pia mater were filled with blood.

On the anterior half of the brain, as well on its upper convex surface as at its base, the meninges were inseparable from the brain-substance, without laceration of the latter; posteriorly, however, they could be readily detached. The consistence of the brain generally was very soft and oedematous, and presented numerous bloody points on section. The medulla oblongata was likewise softened.

Effusion and hyperæmia occurred on the under portion of the spinal cord, which was also atrophied and softened. The lungs slightly oedematous. Liver permeated by gray, sago-like granules. Spleen soft. Mesentery swollen and white.

The author believes that the blood in these cases escaped from the sweat-duets, from their overgorged capillaries, the general muscular paralysis favouring exudation from the skin. Moreover, he calls to mind the disposition to altered composition of the blood in paralytics, to serous effusions and sanguineous exudation, as seen in the sanguineous tumours of the dura mater and external ear in such patients. Something analogous may also be seen in septic states of the blood, where haemorrhagic effusion takes place in the form of spots or petechiæ.

To explain the occurrence of the oozing of blood in paralytics, he refers to the frequent attacks of congestion of the head they are prone to, as happened in his first recorded case; and although in the second instance the cold surface argued against such congestion, yet the numerous bloody points found on cutting the brain after death indicated its probable occurrence and a dilated state of the capillaries. Whether the serous effusion beneath the dura mater could have any influence in favouring the escape of blood, he will not profess to determine.

It is doubtful what value, in a pathological point of view, should be given to these two isolated cases of bloody exudation from the face and head. There is a lack of several particulars, which prevents our arriving at a positive conclusion whether the circumstance might or might not have been due to causes independent entirely, or nearly so, of the actual morbid condition of the patients. Moreover, the two cases were much alike; in the one there was evidence of congestion of the head, whilst in the other there was a deficiency of blood. The bloody points seen on slicing the brain in the latter case by no means indicate cerebral congestion. In forming a judgment respecting such cases we must bear in mind the diseased condition both of the blood and capillaries in most paralytic patients, favorable to exudation, and also the restless habits of some, instanced by their frequent picking or rubbing the surface and pulling out hair. An occasional cause of bloody points on the skin, as we have witnessed, is the irritation and wounding of the surface by the rough ends of straw used in the bedding of patients, for pillows, &c. Whether straw pillows were used in the two cases recorded we know not, but think it very probable, as they are common in Continental asylums. The marvellous in the occurrence of the swollen ear of the insane, especially of the paralytics, has ceased to impress the medical superintendents of asylums, now that careful supervision of asylums and close inquiry into such cases have sufficiently shown that that lesion is the result of mechanical violence, and not self-originated from the peculiar morbid state of the patients. And, on the whole, we are inclined to look upon these instances of "bloody sweating" as of mechanical rather than of vital origin. However, the matter is deserving the attention and observation of our readers.

ART. 42.—*Notes on Hæmatoma of the External Ear
in the Insane.*

By Dr. W. PHILLIMORE STIFF, Medical Superintendent of the County Asylum, Nottingham.

(*British Medical Journal*, August 1, 1863.)

"The subject," says Dr. Stiff, "of sanguineous cyst of the ear in the insane is of importance in a medico-legal point of view. Some writers allege that these hæmatoic cysts are the result of injuries, either self-inflicted or from the employment of violence on the part of attendants and nurses. The statement of Gudden, in support of the latter view, has been most extensively circulated. He maintains that these swellings are entirely owing to mal-treatment, and points out that ears closely resembling those of the insane are not unfrequently met with amongst sculptures depicting pugilistic athletæ. Singularly enough, in his efforts to bring this home to the attendants, he avers that he has never met with an instance in which the injury could be traced to the patient himself, or to other patients. How this can be reconciled with the fact that patients frequently fall on the ear in fits, and are struck on it by their own associates, I am at a loss to imagine. Again, in the lately published work of Dr. Kramer, 'On the Aural Surgery of the Present Day,' the observations of that author are calculated to encourage the theory of the physical origin of the disease. He says—'The causes of these bloody tumours on the cartilage of the ear are unknown, though we must admit that they are especially likely to be produced by violence (blows on the ear), which, perhaps, explains their more frequent occurrence on the left ear.' (New Sydenham Society's edition, page 41.) In the 'British and Foreign Medico-Chirurgical Review' for January, 1858, I published a short memoir on this peculiar disease, illustrated by engravings after photographs of the altered ears; and I therein advocated the contrary opinion, based upon observation and inquiry, that the lesion is not occasioned by physical injury, but that it is the result of a spontaneous hæmorrhage arising out of a pre-existing diseased condition of the vessels of the pinna of the ear.

"Two cases came under my notice last autumn, strongly confirmatory of this opinion. Both were to be seen running their course together, but distinct in their appearance and characteristics. The one was a well-marked example of hæmatoma, arising without any external interference; the other, a case of severe contusion of the ear after a blow, not presenting any appreciable swelling, but only ordinary interstitial ecchymosis, although this patient was predisposed to hæmatoma, and was the subject of partial ossification of the cartilage of the opposite ear."

Dr. Stiff here relates these two cases, which he says corroborate, in a remarkable manner, the views of those who consider that the phenomenon is the result of disease, and not of accident, and that they may be regarded in the light of a crucial experiment, decisive of the question at issue, confirming the fact, in the one instance,

that haemato-ma may be developed without the intervention of external violence, and disproving, in the other, that it could be produced by a blow in a person predisposed to the affection.

"It is admitted on all hands (continues Dr. Stiff) that these effusions occur most frequently amongst the insane, or in patients affected with serious lesions of the nervous centres. It has been shown by several pathologists that there is a pre-existing state of disease before the occurrence of the sanguineous effusion. The disease may be observed in both ears in different stages, and occasionally the cartilage may become ossified without the occurrence of the stage of effusion. When blows are received by the same class of patients over the analogous structures of the eyelids and nose, the same morbid changes do not take place. Epileptics are less liable to it than chronic maniacs. Cartilaginous nodules are sometimes developed after wounds of the ear; but their history, course, and pathology, are quite distinct.

"In two specimens of haematoma occurring in the ears of the same patient, Mr. Toynbee informed me that he had found the cartilage of the right ear greatly hypertrophied, and in some parts ossified. It had Haversian canals and corpuscles like normal bone. Bony matter was deposited in the left ear, which did not go through the various stages.

"I entertain no doubt that the disease depends upon internal or centric causes, and is, probably, one of the results of the atheromatous diathesis. It runs a well-defined course, the duration varying from a few days to several years, and, unlike contusions, leaves structural alterations and disfigurement of the organ."

ART. 43.—*The Pathological Relations between Puerperal Mania and Albuminuria.*

By DR. ARTHUR SCOTT DONKIN, Lecturer on Medical Jurisprudence, Neville Hall College, Newcastle-on-Tyne.

(*Edinburgh Medical Journal*, May, 1863.)

"Medical science," says Dr. Donkin, "is indebted to Professor Simpson for having first directed attention to the coexistence of albuminuria and puerperal mania, in a contribution to the Obstetric Society of Edinburgh, in 1856.* In this paper Dr. Simpson contented himself with demonstrating merely the frequent coexistence of the two morbid conditions, without attempting to explain the exact pathological relation between the renal and mental affections, leaving that to be accomplished by future clinical investigation. Dr. Simpson's communication is, I believe, up to the present time, the only contribution we possess on the subject, either in our own or any other language."

Dr. Donkin divides puerperal mania into the two following classes, on the distinctive features of which he strongly insists:

* *Edinburgh Medical Journal*, vol. ii., p. 766.)

“ *Class I.*—The mania is essentially acute, and runs a brief course; it is always accompanied by a very rapid pulse, sthenic or asthenic, and generally a moist skin. The attack is usually ushered in and attended for some time by pain and heat of head, great intolerance of light, sound, or of any movement in the room, tinnitus aurium, and pervigilium. There is a strong tendency to a fatal issue, death taking place by way of coma or asthenia.

“ *Class II.* is characterised by complete absence of constitutional disorder; the pulse retains, or occasionally exceeds very slightly, its natural frequency. There is no danger to life, but the mental derangement is generally more or less chronic, and frequently merges into permanent hopeless insanity.”

“ *What constitutes,*” asks Dr. Donkin, “ *the differential pathology between them?* Those cases referrible to the ‘non-constitutional’ group, which are dangerous only to reason and not to life, we can readily understand. They are neither more nor less than cases of ordinary insanity, excited, in females predisposed hereditarily or otherwise to the disease, by causes incidental to parturition, such as nervous shock, haemorrhage, exhaustion, and a variety of other causes which it would be tedious and unnecessary to enumerate. But what are we to understand by the other acute constitutional and fatal class? There is undoubtedly something *special* in their pathology which has not been explained. They have been described by some authorities as instances of cerebro-meningeal inflammation or phrenitis. But this interpretation of their nature is no longer tenable, owing to the fact that in no single fatal case have the traces of congestion or inflammatory action been detected in the brain or its membranes; so that Dr. Tyler Smith correctly observes, that ‘the pathological lesions found after death from puerperal mania do not throw any great light upon the essential nature of the disease. No constant morbid changes are found within the head, and most frequently the only condition found in the brain is unusual paleness and exsanguinity. Many pathologists have also remarked upon the extremely empty condition of the blood-vessels, particularly the veins.’ Now, this fact is the more remarkable, because the most dangerous and rapidly fatal cases are those whose symptoms simulate most closely those of inflammation of the brain and its membranes. These are the cases which Dr. W. Hunter had in view when he stated in his lectures, long ago, that ‘when puerperal females are out of their senses with fever like peraphrenitis, they will in all probability die.’ Dr. Gooch, referring to the relation between the rapidity of the pulse and the fatality of the disease, pointed out that the frequency of the pulse is the only sure guide in forming a prognosis, and illustrated his observations by showing that ‘his cases which terminated fatally were all attended with a rapid pulse, while none of those with a slow or moderately excited pulse died.’ Subsequent experience has fully corroborated the accuracy of this opinion.

“ Now, the object I have in view in offering the following observations on this important pathological question, is to demonstrate that the acute dangerous class of cases are examples of uræmic

blood-poisoning, of which the mania, rapid pulse, and other constitutional symptoms, are merely the phenomena; and that the affection, therefore, ought to be termed uræmic or renal puerperal mania, in contradistinction to the other form of the disease."

Dr. Donkin relates a long and interesting case of acute puerperal mania, in illustration of this theory of the pathology of his Class I. of puerperal mania. From the anasarca preceding labour in this case, and from the albuminous urine with low specific gravity, and yet with an absence of all fibrinous exudation, which was observed the second day after delivery, Dr. Donkin argues that the morbid condition of the urinary secretion resulted from passive congestion (from mechanical compression) of the renal veins. He further traces the maniacal symptoms to the circulation of urea in the blood consequent on this state of passive congestion of the kidney. "That *uremia* (he says) was the *second* link in the chain of morbid changes in this case is evident from the low density and albuminous condition of the urine at a period anterior to the development of constitutional symptoms and of cerebral and mental derangement. If further proof were requisite, it is furnished by the peculiar and distinct violet colour of the blood-serum, together with the presence in it of a considerable quantity of carbonate of ammonia, a product of decomposed urea; these being the characters which, according to Frerichs, Litzman, Braun, Heller, Kletzinsky, Oppolzer, Gegenbauer, Lehmann, and others, are generally found in the blood-serum of puerperal females attacked with uræmic eclampsia."

But if the question arises, Why should uremia in the puerperal female produce convulsions and coma in one instance, and mental aberration with a rapid pulse in another? To such Dr. Donkin replies, that we cannot expect the poisons engendered in the blood by the retention of the renal secretion to be exempt from the well-ascertained principle of toxicology—that the action of almost every known poison is modified or entirely changed in character according to the dose, to idiosyncrasy, and the like influences. Besides, it is quite possible that in the one disorder a species of poison may be developed different from that which excites the other.

To the history of this case Dr. Donkin appends some able observations on its special pathological relations to the theory in question, and concludes his argument with the following remarks:—"If it should be objected that a single case is not sufficient evidence to establish the accuracy of my views, I must observe that the maxim which applies to investigations in natural history is equally applicable to those of pathology, namely, that although a single typical specimen may not be sufficient to establish a species, it is at least amply so to display its characters. But even should future investigation not corroborate the accuracy of my observations, yet I trust they will effect some good, at least, by directing others still more closely to the examination of one of the most important and, at the same time, neglected subjects of obstetric pathology. I say neglected, because I can only find recorded five cases of the acute dangerous variety of puerperal mania in which attention was

directed to the condition of the urine. Four of these are the cases recorded by Professor Simpson.* In all of the four, albuminuria existed at the outset of the mania. In one of them puerperal convulsions occurred before delivery, with very marked albuminuria; and after a very brief convalescence and absence of albumen, acute puerperal mania set in, and the urine was again found to be highly albuminous. In another case there were two sudden attacks of puerperal mania, with a week's interval between them, and at the commencement of each attack the urine was loaded with albumen, and free from it in the interval. In one of these cases the duration of the mania was two or three weeks, and the albuminuria observed at the outset of the disease had disappeared entirely before the restoration of the intellect.

The fifth case alluded to is recorded by the late Dr. Graves, in the last edition of his 'Clinical Lectures.' This was the case of a young woman (æt. 21), apparently of sound constitution. On the sixth day after giving birth to a seven-months' child she became the subject of acute puerperal mania, accompanied with a very rapid pulse (125), when admitted into the hospital, on the second day of the disease; she had been twice bled previously. She died on the eighth day of the attack, and up to her death the pulse is recorded to have kept as high as 120. Her skin was moist and perspiring, but the lochia and milk were suppressed. There was great pervigilium, she having slept twice, and on one of these occasions, after taking, in frequent small doses, three grains of acetate of morphia; the mania closely resembled delirium tremens. Death took place by way of asthenia. An investigation of the body was made six hours after death, before decomposition could have altered the most delicate tissue. Attention was specially directed to the condition of the brain and uterus. "But," observes Dr. Graves, "the most careful examination could discover in the brain no phenomena in the remotest degree capable of explaining the occurrence of delirium or death." He further adds, that "the structure of the uterus was natural, and it exhibited nothing worthy of remark in its interior. The rest of the abdominal viscera were healthy." The kidneys are not separately mentioned by Dr. Graves, but he directs especial attention to a symptom which he considered to be of "very considerable importance;" and very justly so, for it was no other than a great "diminution of the urinary secretion." The patient is described as having once voided urine, and that once on the third or fourth day of the attack. Unfortunately, however, her urine was not examined, otherwise the pathology of the case might not have appeared a mystery.

* *Edinburgh Medical Journal*, vol. ii., 761. Dr. Simpson, more recently, states that he has repeatedly seen the same connexion between puerperal mania and albuminuria as well as had other instances communicated to him. (*Lec. Medical Times and Gazette*, November 10, 1860.)

ART. 44. — *On Catalepsy.*

By MR. THOMAS JONES.

(British Medical Journal, June 6, 1863.)

This case was admitted into St. George's Hospital under the care of Dr. Fuller. It was seen by Mr. Jones, the Assistant Resident Medical Officer to the Hospital, and he describes the case.

CASE.—*Male, aged 60, suffered from the effects of strong mental shock for a fortnight; altered vision and hearing three days; sudden tetanic rigidity of all the muscles, which caused him to be fixed in the position in which he happened to be at the time of seizure; subsequently the limbs retained any position in which they were placed; partial loss of consciousness; duration of fit twenty two hours; no recurrence; good recovery.* Wm. G., aged 60, is of strong bony frame; about six feet in height, with well-formed muscles; complexion ruddy. He is of a melancholy disposition. His passions are readily excited. He says “the least thing excites him, and causes him afterwards great annoyance and pain over the top of the head.” His previous health was remarkably good; he was strong and hearty until a fortnight before admission, when he unexpectedly received intelligence of the sudden death of his wife; this caused him considerable mental depression. On two or three days before the present attack he was considerably annoyed by hallucinations of vision and hearing. He saw varieties of colours, and heard various sounds, sometimes the firing of guns. On these days he was noticed by his fellow-workmen to be very “absent in his mind” on two or three occasions, remaining in this state two minutes.

While suffering from the above premonitory symptoms, he was suddenly seized, while in the act of plastering, with the trowel in one hand and the brush in the other, about 11 A.M. on May 2nd, with a fit. He stood erect on the scaffold on which he happened to be standing at the time, with his arms outstretched, his legs fixed, the whole body rigid and immovable; his eyes were widely open; he appeared to be quite insensible to all external objects. His arms were found to be so rigidly fixed in the elevated position that it was found impossible to pull them down; and the trowel and the brush were so tightly grasped in the hands that they could not be removed. On two or three occasions, however, while in this state, he deliberately removed the trowel from one hand into the other in order to have it free to get his handkerchief out of his pocket to wipe his nose; having done this, he resumed his statue like position. He remained in this state for two hours, when he was seen by Mr. Chappell of George Street, who succeeded, after considerable difficulty, in bringing down his arms. Notwithstanding a mustard poultice applied to the nape of the neck, and cold cloths to the head, as ordered by Mr. Chappell, he continued in the same condition until 4 P.M., when he was removed into the hospital.

On admission, he was able to walk if pulled along, otherwise he would not advance a single step. He seemed tolerably firm on his feet; for, on pushing him so as to try to put him off his balance, he would make sufficient exertion to regain his equilibrium. The expression of countenance was most indifferent; the eyes were wide open, but his eyelids would remain in any position in which they were placed. He stared fixedly at vacancy. His attention could not be directed towards any object. His eyelids were sensible to the touch; the pupils were widely dilated, but acted readily under the stimulus of light. His skin was warm. The respiration was very superficial. Occasionally he would take a deep sigh. The pulse was 90; full, intermitting every eight or ten beats. When raised into the erect

posture, he would remain so. On raising his arms they dropped. There was some slight rigidity on flexion and extension. The jaws were clenched ; but he swallowed water without any difficulty when it was poured into his mouth. He was apparently quite insensible ; for in vain we endeavoured to rouse him by calling loudly in his ears ; and pinching him did not produce the slightest indication of discomfort.

I galvanized him at once pretty severely ; and the muscles electrified contracted firmly. This seemed to cause him some pain; for he made a loud noise, and, on one or two occasions, he stood erect. Galvanism was persisted in for a quarter of an hour; as soon as it was discontinued, he relapsed into the same passive state. But the bystanders thought he seemed somewhat "livelier," and that he required less assistance to walk. Certainly, all the rigidity of the muscles had now passed off.

The cold douche was now tried. The water was directed from some height on his face and head. He did not offer much, if any, resistance. He closed his eyes firmly, and swallowed the water that entered his mouth ; otherwise the treatment made but little impression upon him.

The above means having failed to effect much good, he was sent to bed. He walked up the stairs (with assistance) with a firm, steady step, without once making a false one. When in bed, in whatever position he was placed, however uncomfortable, he would remain unmoved. The arms were raised, and they remained elevated ; I next raised his head off the pillow, and in that position it remained. At the same time I raised his trunk, and placed it at an obtuse angle with his legs ; there it remained with his head in the position previously placed, turned to either side, with his eyes closed or opened just as they were placed. Now he presented a most curious spectacle, in the half-sitting posture, with the head thrown forwards, eyes open, but still appearing lifeless, and his arms outstretched. I can compare him to nothing better than to a tinted statue. He remained in this position, perfectly immovable, several minutes, until his position was again changed. He seemed to have perfect control over his sphincters ; for when a utensil was conveniently placed he immediately passed urine, which was high-coloured and free from albumen. I ordered an enema of turpentine, with half an ounce of tincture of assafœtida, to be given immediately ; and the following draught every four hours :—

- R. Tinct. valerianæ ammoniatæ 5j.
- Spirit. ætheris chlorici 5ss.
- Decoct. aloes comp. 5iv.
- Infusi valerianæ 5vij.

9.30 P.M.—There was considerable rigidity of the muscles. His head could not now be raised off the pillow, nor the body into the sitting posture ; otherwise he was much in the same condition. He retained the enema.

May 3rd, 10 A.M.—He seemed much better. He spoke for the first time since the attack, about eight o'clock this morning, when he replied in answer to a question asked by the nurse as to whether he wanted the night-stool. From this time, he continued to talk, but still very reluctantly, and did whatever he was asked. He got out of bed without assistance. His bowels had acted freely. He took his medicine regularly during the night. He had about three hours' sound sleep. At present, his aspect was very gloomy. He answered questions slowly : it was with difficulty that anything could be elicited from him. He had perfect power of, and control over, all his muscles. His face was somewhat flushed ; pupils dilated, still active ; the right was a little larger than the left. Pulse 90, now regular.

On being questioned closely as to his consciousness during the fit, he said

that he had a confused recollection of almost everything that occurred. At the first onset of the attack he remembered being immovably fixed to the plank on which he stood; he felt his arms fixed in an elevated position, and his mouth firmly clenched. He could hear distinctly those who talked to him, and he could see them; he felt, however, confused, and mistook one person for another. He remembered the treatment adopted before and after his admission into the hospital. He complained very much of the cold douche and the galvanism; and that the latter caused him great pain, in consequence of which he remembered crying out. He felt that, however unpleasant this treatment was, he could not acquaint us of the fact by speech or any other means. He felt himself better after the galvanism; he fancied he could walk with much greater freedom. He seemed much annoyed that his body, during the attack, was placed in the different uncomfortable and ridiculous positions.

9.30, P.M.—He had been less communicative during the day than he was this morning; he had taken his food well, and fed himself. The tongue was clean. The bowels had not been open since the morning. He was now seen by Dr. Fuller, under whose care he was admitted, who ordered the medicine to be continued, and a senna draught to be given the next morning.

May 4th.—He complained of headache and depression of spirits. He was able to get out of bed without any difficulty, and walk about the ward. The treatment was continued, and he was ordered to have ordinary diet and a pint of porter.

May 6th.—He complained of weakness and occasional pains on the top of the head, which he generally felt after any excitement. With this exception he felt quite well. The tongue was clean; bowels open. There was scarcely any difference in the size of the pupils. The heart's sounds were normal.

May 13th.—He had no symptoms indicating a recurrence of an attack. He looked much more cheerful. He left the hospital to-day feeling quite well.

ART. 45.—*On Rabies.*

By M. BOULEY.

(*Journ. de Méd. et Chir. Prat.*, Août. 29, 1863.)

M. Bouley's remarks were recently presented to the Academy of Medicine at Paris, as a report on a paper on the same subject, by M. Bévière. The outline traced includes all the characteristic features, and it could not have been done by a better artist.

Mr. Youatt, an English veterinary surgeon, was the first who supplied a really scientific and complete account of the early stages of rabies in a volume, "The Dog," which M. Bouley has translated. "For several hours," says the author, "the diseased animal retires to its basket or couch, shows no disposition to bite, and obeys, although reluctantly, the orders of its master. In this stage, the dog curls itself up, and lies with his head deeply sunk between his chest and forepaws. He soon becomes restless and morose, and wanders from place to place, and seems to appeal in turn to each of his human friends for some relief to his sufferings."

The persevering affection of dogs, even in the most advanced stages of rabies, for their masters and those persons to whom they are attached is one of the most singular and important features of

the disease. So powerful are these feelings, that a mad dog often refrains, even when the attack is at its height, from biting persons known to him, a circumstance in which originate serious errors as to his dangerous condition. Indeed, it is difficult to believe in the presence of rabies, in an affectionate and obedient creature, in which the only apparent symptoms are sadness, agitation, and unusual shyness. The illusion may generate the most fearful consequences, for in spite of himself, the animal, in a sudden fit of ill-temper, or provoked by a castigation perhaps incurred for disobedience, or for having displayed signs of partially repressed anger, will inflict a bite involving the most formidable results.

It is under circumstances of this description that the owner of a dog is most usually bitten.

In general, mad dogs spare persons they are fond of. Were it otherwise, rabies would be far more frequent in the human subject, as habitually the condition of the diseased animal remains unsuspected for one or two days, during which he is surrounded by his master's family and servants.

In the early period of hydrophobia, when the nature of the affection is fully apparent, dogs are attacked in the intervals of the paroxysms with a peculiar kind of delirium, which has been first noticed and described by Youatt.

This delirium is marked by strange motions which seem to indicate that the diseased animal sees objects, and hears sounds existing merely in what we must fain call his mind. He will occasionally stand motionless, as it were, watching, and suddenly bound forward and bite the air, or rush furiously at a wall, as if he had heard on the other side sounds of hostile intent.

The dog may therefore be considered to be liable to genuine delusions, induced by the complaint. Whatever be the philosophical interpretation of the fact, it is one of great importance, which, by its very singularity, should awaken attention, and justifies the most sinister suspicions.

The symptom, however, being very transitory, and altogether dispelled by the master's voice, may well escape detection. "The imaginary causes of terror," observes Youatt, "yield at once to this magical influence, and the animal approaches his master with the customary signs of affection."

"This condition is followed by an interval of rest; the dog's eyes slowly close, his head droops, the forepaws seem to give way, and he seems on the point of falling. But suddenly he recovers himself, fresh phantasms disturb him, he fiercely glares around, and snaps as if to seize some object within reach, or rushes to the full length of his chain, to encounter an absent enemy."

Youatt further remarks that if the dog was previously of an affectionate disposition, his uneasiness is most eloquent, he seems to implore his master's pity, and his delusions never bear any character of ferocity.

Ill-tempered animals, on the contrary, and those which have been trained to fight, present a fearful expression of countenance. Their eyes are often bloodshot, and when they preserve their natural

colour, their brightness is dazzling, and they resemble two balls of fire.

At a later stage, the dog's restlessness increases. He incessantly goes and comes, and wanders from one corner to another, rises, lies down, and continually changes his position.

He arranges his litter with his paws and nose, so as to form a cushion for his stomach, and suddenly arising disperses his couch. If in a kennel, he never remains quiet, but keeps moving round and round. If at liberty, he seems to be anxiously seeking for some lost object, and peers into every hole and corner with unceasing agitation.

It is a remarkable, and at the same time formidable fact, that the affection of many dogs for those who have the care of them, seems actually to increase, and their fondness is expressed by licking their masters' hands and faces.

The singularity of the symptoms in this early part of the disease in the canine race, is deserving of every attention, especially as it accounts for the fatal security of the owners. They cannot conceive that a gentle, obedient animal, so profuse in its demonstrations of attachment, should, at the same time, be breeding the most fearful of all known diseases. Hence, a degree of blind confidence, and worse, of utter disbelief, which often proves fatal to the owners of dogs, especially of those which are made constant companions, and in their healthy condition, are the safest of friends, but may by hydrophobia be transmuted into the most cruel and treacherous enemies.

M. Bouley opines that the assemblage of these early symptoms, is extremely significant, and that if the public were repeatedly cautioned of their real import, many accidents might be averted, which are at present incurred through ignorance; for instance, the public should be repeatedly cautioned that all dogs beginning an illness must, on principle, be held in suspicion.

That sullenness, moroseness, and agitation are further causes of distrust; the snapping, barking without motive, or incessant and purposeless seeking about the rooms, are also very serious indications.

That excessive and unwonted marks of affection, perpetual licking of the hands, &c., are signs not to be overlooked.

The cause of many catastrophes, in M. Bouley's opinion, is the prevalent and erroneous notion that a dog which drinks readily, cannot be mad; hydrophobia or horror of liquids does not exist, and is one of the most mischievous results of our fondness for Greek names.

A mad dog, says M. Bouley, has no aversion to water. On the contrary, he laps up the liquid and often swallows it. Although he may not drink, he nevertheless endeavours, and often with desperate efforts, to do so.

Neither does a mad dog, in the early stages of the malady, reject his food, but promptly tires of it.

It is a remarkable and characteristic fact, that whether from a morbid vitiation of appetite, or from an irresistible impulse to bite,

the animal seizes in his mouth, lacerates and often swallows substances wholly unfit for assimilation.

Straw, wool, the stuffing contained in furniture, blankets, carpets, curtain-fringes, slippers, wood, grass, earth, stones, glass, horse-dung, excrement, he swallows all. On dissection, the stomach of a mad dog is found to be a receptacle for a host of dissimilar substances, which, by the very fact of their unwonted aggregation, suggest the idea of hydrophobia, a surmise which the history of the symptoms converts into a certainty.

It is therefore imperatively necessary to watch with care any dog who obstinately lacerates hearth-rugs and cushions, who gnaws the wooden frame-work of his kennel, or greedily devours clay, straw, &c.

Excessively copious salivation is not, according to M. Bouley, so positive a pathognomonic of hydrophobia, as authors have in general asserted. The absence of this symptom should not therefore induce a feeling of complete security. The mouth of some dogs affected with rabies is occasionally filled with a frothy secretion, especially during the paroxysms. In others, on the contrary, the mucous membrane is in a state of absolute dryness, and assumes a purple colour, a fact habitually observed in the more advanced stages of the complaint. In some few instances, the condition of the mouth is not in any way remarkable.

The dryness of the mouth and throat, gives rise to a symptom of extreme importance in its bearings on the most interesting feature of the disease—viz., its transmission to the human subject.

When the fauces of a mad dog are dry, *the animal rubs his chops with his forepaws*, as if a bone was jammed between his teeth or sticking in his throat. He also frequently gapes in consequence of the paralysis of the maxillary muscles, which occasionally attends the later stages of furious madness.

This is a very dangerous symptom, because the master, desirous of relieving his dog, will put his fingers into his mouth, and thus receive a bite, which may be disregarded until it is too late.

Vomiting is sometimes a premonitory sign of rabies, and the rejected matter consisting sometimes of blood mixed with pus, a mistake may occur, which in M. Bouley's own case very nearly led to fatal consequences, uncomplicated haemorrhage having been supposed to exist, in a case which proved to be genuine hydrophobia.

A dog *vomiting blood* should therefore be attentively watched.

Another striking symptom which reveals latent hydrophobia beyond any possibility of a doubt, is *the tone and pitch of the animal's bark*. Such a bark, once heard, can never be forgotten, nor be mistaken for any other.

Instead of barking freely three or four times in succession, as it usually does, the animal utters one loud bark, followed by several decreasing howls, during which the jaws do not close; the sounds emitted are, moreover, hoarse, damped and lower than usual.

This brief description can of course convey but a very inadequate idea of the characteristic bark of the rabid dog; but the important

point to be established is, that the pitch of the voice is invariably changed, and that the bark is performed in a manner entirely different from its habitual mechanism. When the well-known voice of a familiar dog undergoes sudden alteration, and is replaced by unusual sounds, the observer's suspicions will therefore in future be aroused by the mere fact of their strangeness.

Under the influence of hydrophobia, a dog will *suffer pain in silence*, it may be struck, or pricked, or otherwise wounded, or even scorched, without uttering the slightest howl or whine.

It is not that the animal is insensible to pain; it endeavours to avoid it, and if its litter be set fire to, will escape from the flames and retire into a corner; if a red hot poker be presented, and that in a paroxysm of rage the animal bites it, he immediately recoils. The dog evidently feels pain, but gives no utterance to any expression of suffering.

If therefore a dog receives blows without whining, the circumstance should put the master on his guard.

M. Bouley also views with suspicion any dog obstinately gnawing at his own skin, in determined places; this may possibly be the result of mere local irritation, but the symptom has, in general, a far more momentous import.

The sight of an animal of his own species exercises so powerful an influence in causing latent rabies to break out, that in doubtful cases, the method is always resorted to at Alfort for the purpose of establishing the diagnosis. It is a singular fact that all animals affected with hydrophobia betray the same rage at the sight of a dog, an observation of extreme importance, and suggestive of practical inferences deserving of every attention.

Lastly, a dog labouring under the first symptoms of hydrophobia, is apt to quit his master's house for a couple of days, and if not killed during that interval in some populous district where his condition has been discovered, he will return to his old dwelling in a far more dangerous state than when he left it. Accidents frequently happen under these circumstances. The first impulse is to welcome the truant home with all sorts of caresses; especially as he returns home covered with mud and blood, in a haggard and truly miserable condition. At this stage of the disease, the tendency to bite has become imperative, overcomes the creature's feelings of affection, and he too often repays with a deadly bite the kindness which is shown to him.

A dog, therefore, that has been absent for a day or two, and returns home in a dirty and wretched state, should be very carefully watched ere he is re-admitted to the same familiarity as before.

Such are the first symptoms characteristic of rabies in the dog, at a period when their knowledge may lead to the sequestration of the animal, and avert irreparable catastrophes.

The learned reporter then alluded to the system of *muzzling* enforced by police regulations, with a view of preventing the transmission of hydrophobia. The measure, as it is applied in Paris, is entirely inoperative, and not more efficacious for its intended purpose than if the muzzles were merely painted on the dogs' faces. It

cannot, indeed, be otherwise ; an efficient muzzle is utterly incompatible with the anatomical structure of the animal. The nasal cavities of the dog are too narrow to admit of his breathing, like the horse, exclusively through the nose ; respiration cannot be completely performed unless the mouth is more or less open. The tongue and the entire mucous lining of the buccal cavity copiously perspire, and require frequent exposure.

At the recent dog show at the *Jardin d'Acclimatation*, two appliances were exhibited, which M. Bouley approves of, and considers likely to lead to a solution of the problem. These are the apparatus of M. Charrieré, of Lausanne, and the muzzle invented by Professor Goubaud, of Alfort. Both consist of two jointed parts, longer than the dog's jaws, and supplied with a spring, so as to open and shut in harmony with the movements of the mouth.

This ingenious arrangement removes the objections entertained to the muzzles in present use. Should the event confirm this surmise, M. Bouley's aversion to muzzling will cease ; for although it is chiefly within doors that fatal accidents occur, it must be admitted that the dogs have been bitten in the streets by unmuzzled, or imperfectly muzzled, aggressors.

ART. 46.—*On Muscular Hallucinations.*

By M. EUGENE SEMERIE.

(*Gaz. Hebdom. de Méd. et Chir.*, Feb. 6, 1863.)

Musculation,* or the sense of muscular activity, makes us conscious of our muscular efforts, and of the fatigue which results from them. Thus conceived, musculation should be regarded as having an existence distinct from touch. The reasons in favour of this distinction long ago attracted the attention of some philosophers. Aristotle even, in his *Treatise on the Soul*, made the remark that, while the other senses could but reckon one single opposition by contraries, that of touch possessed several ; hot and cold, dry and moist, hard and soft, besides many others of the same kind, and that we did not know clearly what was the unique characteristic of the sense of touch.

Cardan, that strange and subtle genius, who was able to study from his own experience the subject of tactile hallucinations, recognised the existence of a special sense giving consciousness of weight and its opposite. But it is only at a much more recent epoch that study has resulted in anything approaching the analysis of tactile sensations. Charles Bell in the first instance, and afterwards, almost in our own day, Belfield, Lefevre, Gerdy, MM. Beau and Landry, have been the promoters in this movement. The latter has summed up in an excellent work his opinions on this subject.

According to Auguste Comte, Blainville has pointed out in a very

* The word *musculation* was first used by Gerdy, who gave it quite a different meaning. It was Auguste Comte who first employed this word to denote the sense of muscular activity.

precise manner the existence of musculation. The following is what this great philosopher says on this point. "I believe we ought finally to acknowledge eight (senses) really distinct: one general, touch, and seven special; musculation, gustation, calorition, olfaction, audition, vision, and electriton." M. Semerie ranks the latter after Gall and Blainville, following their increasing speciality conformably with that of corresponding phenomena, and measured by successive appearance, in the animal scale. The two extremes alone require a special explanation. "*With regard to the first, the author adopts essentially the opinion of Blainville, who separates it from the general sense of pressure, reserving for it the direct appreciation of muscular efforts, and of the fatigue which they produce.*" As to the last, its commonly slight development in man should not hinder the acknowledgment of its distinct existenee, which is very decided in certain animals, and more or less common to all vertebrates." We search vainly in what remains to us of Blainville for so precise an opinion.

However this may be, musculation has, at the present day, acquired a right to be cited, and it is not my business to develop here all the reasons which concur in making it a special sense. These reasons have been largely dwelt upon by the authors whom I have quoted above, and M. Audiffard, in his inaugural thesis (Montpellier, 1859), recently furnished others, and made an ingenious application of them, attributing rheumatism to exaggerated sensations of calorition and museulation, that is to say, to a true neurosis of these two senses, of which the fluxionary state would in more than one case be only the consequence. "When we consider," says he, "that all fatigue makes itself felt more especially in the articulations, and in the muscular fascines, one would be almost tempted to see in that a confirmation of our supposition." The object proposed in this paper is only to complete the history of this new sense in examining what happens to it in insanity, and to what order of hallucinations it gives rise.

One ought to presume the existence of muscular hallucinations, and even that they are frequent, for they have for their seat the vast muscular apparatus and its corresponding portions of the brain.

In hypomania, and especially in the forms called stupor and parphobus, one frequently observes the following hallucination, which is also met with in nightmare, and certain kinds of dreams. Some danger menaces you, an assassin, for instance; you are afraid, you fly: the assassin follows you; you fly more quickly; full of terrible distress; your feet scarcely touch the earth, you cross seas and mountains in an insensate course; the assassin follows you more rapidly still, and is about to overtake you. When this takes place in a dream, the climax of terror wakens you; but in madness, the awaking never comes, and the situation of the patient is horrible to behold. In both cases, the pulse is accelerated, the skin bathed with perspiration. The sensation of muscular activity is sometimes so strong, that the patient is fatigued as though he had actually run. The following is another remarkable example: You wish to fly, but

an invincible force holds you back ; you wish to defend yourself, but your arms remain without movement, in spite of the most energetic desire to do so ; you wish to cry, but it is impossible. You are immovable as a living stone, and you waste yourself in superhuman efforts. Although there may have been no effective movement, the effort is sometimes so violent, as to cause the sensation of fatigue.

These hallucinations belong to the class which M. Baillarger has called psycho-sensorial. Others are purely psychical, according to the denomination of the same author.

In certain forms of mania, especially those which are complicated with lesion of the motive powers, the patients are not only unconscious of the paralysis which creeps on, but they experience sensations altogether different. Nothing is more common than to hear them say that their strength is doubled, that they can walk for whole days, carry on their extended arm enormous weights, or that they feel an unaccustomed vigour in all their members. This feeling of power and strength, coinciding sometimes with an advanced stage of paralysis which prevents the patient moving, offers a most striking contrast.

The inverse takes place with many hypemaniacs. They cannot move or walk ; they have no muscles : with some there is even a sensation of fatigue in the members. The hallucination then becomes psycho-sensorial.

One might multiply examples. Thus erotic ideas awaken in madness, as in a dream, very distinct and detailed sensations of the corresponding action.

It is by the appreciation of muscular effort that we know whether an object is more or less heavy. Musculation corresponds with weight, as vision with light, calorition with heat. Thus all the subjective sensations of weight constitute so many muscular hallucinations. The sensation of weight may augment or diminish. In the first case the patients discover in objects they handle an unaccustomed heaviness. Esquirol quotes the case of a lady who rejected a *seringue* with horror because she believed it to be filled with mercury. But the object may be a part of the patient's own body, especially in the case of hypochondriacs. They sometimes cannot raise their arms ; their head is so heavy that they imagine it full of metal, and that they can no longer sustain it on their shoulders. Some are convinced that it is entirely made of silver or lead.

Many insane persons have experienced the following sensation, which frequently occurs in dreams :—They are on the brink of a well, or on the edge of a precipice, their foot slips from under them, and they fall. During the whole time that the descent lasts, one feels besides the anxiety, a sensation which can only be rendered by these words : one feels oneself falling. For the rest, it is the analogue of what passes when one really precipitates oneself from an elevation. This example appears to me to characterize the case where the hallucination, instead of limiting itself to the arm or the head, embraces the entire body.

When the sensation of weight diminishes or disappears, the patient believes himself to be so light, that he fears to be carried away by the slightest breath. Others feel as though effectually transported; they fly through the air; it was thus the witches went to their Sabbath. The following is what Jean Engelbrecht relates of himself:—"On Thursday, at noon, I felt that death was near, and that it proceeded from the lower to the upper extremities. My body became stiff, and I lost all feeling in my feet, hands, and other parts. I could neither speak nor see. My mouth was paralysed; my eyes ceased to perceive the light. I could distinctly hear the assistants say, 'feel his legs, how cold they are; he will soon be dead.' I had no sense of touch; the hearing was also extinguished in its turn. *Then I was carried into space, with the speed of an arrow shot from a bow.*"—Brierre de Boismont, *Hallucinations*, p. 265.

In the ecstasy of mystics this phenomenon is very frequent. In the moment of transport they often feel themselves raised from the earth. Saint Theresa once believed herself to be raised so violently, that she threw herself down with her face to the earth, making efforts not to fly away. Another saint, while praying on his knees, felt himself gently raised, and remained, as he thought, for some hours in the same position, several metres above the ground. The history of mystics is full of facts of this kind.

ART. 47.—*On the Cerebro-Spinal Lesions consequent upon Diabetes.*

By M. MARCHAL (DE CALVI).

(*Gaz. Hebd. de Méd. et Chir.*, October 23, 1863.)

In a memoir presented to the Academy of Sciences at Paris, on the 12th October, 1863, M. Marchal (de Calvi) endeavours to show that cerebro-spinal lesions are frequent consequences of diabetes. In order to this he cites twenty-three cases of diabetes in which cerebral congestion and apoplexy, progress in paralysis, intellectual disturbances, &c., supervened in the course of this disorder; and he lays special stress upon one case in which the cornea sloughed and the humours of the eye escaped, as was the case in animals which Majendie unwittingly made diabetic by feeding them upon sugar.

The fact that diabetes may be brought on by certain injuries to the great nervous centres, is of course well known; but that diabetes may react upon the great nervous centres and produce the grave disturbances which have been mentioned, had not been suspected before the inquiry was undertaken of which the results are recorded in this paper.

M. Marchal (de Calvi) is of opinion that there is a close relationship between gout and diabetes, which he considers, in its most common form, as gout in the blood. He looks upon gout, diabetes, rheumatism, gravel, and "les dartres," as congenerous manifestations of the great uric acid diathesis, and he concludes his paper by an exposition of his views upon these points.

ART. 48.—*On the Incubation of Hydrophobia.*

By M. RENAULT.

(British Medical Journal, February 20, 1863.)

In a recent communication to the Academy of Sciences at Paris, M. Renault says, that during the last twenty-four years he has, at Alfort, made numerous experiments for the purpose of learning the period of incubation of hydrophobia in the dog. During that period, 131 dogs have, under conditions (which he describes), been either bitten by mad dogs under his own observation, or have been inoculated by him with the foam as immediately collected from the mad animals. Of this number, 63 having presented no signs of disease during the four subsequent months, were not further observed. Of the 68 others, the hydrophobia was developed at various periods, as shown in the following table:—

In 1 dog between the 5th and		10th day.
4 dogs	„	10th and 15th day.
6	„	15th and 20th day.
5	„	20th and 25th day.
9	„	25th and 30th day.
10	„	30th and 35th day.
2	„	35th and 40th day.
8	„	40th and 45th day.
7	„	45th and 50th day.
2	„	50th and 55th day.
2	„	55th and 60th day.
4	„	60th and 65th day.
1 dog	„	65th and 70th day.
4 dogs	„	70th and 75th day.
2	„	80th and 90th day.
1 dog	„	100th and 120th day.

ART. 49.—*The Effect of Petroleum or "Rock-oil" in a case of Beriberi.*By Mr. S. AROKEUM, Subordinate, Medical Department
in Indian Army.

(Madras Quarterly Journal of Medical Science, April, 1863.)

In this article Mr. Arokeum states in a very unmethodical manner that he has seen much good from the use of petroleum in cases of Beriberi, and he gives one case in illustration. He also gives us to understand that others, especially the native doctors, have tried the same mode of treatment with similar results.

CASE.—July 2nd, 1860.—T. O., æt. 34, a robust, healthy-looking man, of medium size, fair complexion, black curled hair, muscles well developed, father of two children, temperate habits, presented himself before me this morning, complaining of the following symptoms of some months' duration. General numbness of body; formication; unsteady gait; torpid bowels;

tongue flabby and thickly coated ; urine scanty and high-coloured ; pulse small and quick ; anorexia ; occasionally sudden seizure of cardiac oppression ; skin unusually warm. He has been indulging freely in using ardent spirits, adding aromatic powders to it, being persuaded by a native doctor to take it for the disease he was suffering from, in spite of which the cardiac and other symptoms became alarming.

Omit taking ardent spirits.

- R. Hydrarg. chlorid. grs. v.
Pulv. jalap. co. 5j.
Aquaæ menth. pip. 5ij. M. statim.
R. Ol. petrolei 5ss.
Acacie gummi q. s.
Aquaæ menth. pip. 5ss. M. ter die.

To commence with a dose immediately after the operation of jalap and calomel ceases.

Turpentine stupe to the chest, according as the circumstance may require.

9th.—Continued taking the mixture regularly as I directed, having only had recourse to purgatives ; and am glad to record here, since taking the mixture (*ordered supra*) he only felt the return of cardiac oppression four times during the week, and the other symptoms are gradually disappearing. He now can grasp any object firmly, and walks pretty steadily.

Increase petroleum 5ss. to each dose. Petroleum friction to legs and arms.

20th.—Since last report, I visited him three times and found him improving in every respect. No cardiac symptoms complained of, wishes to return to duty, with promise that he would show himself occasionally.—Discharged.

ART. 50.—*Case of Prolonged and Profound Sleep, occurring at intervals during Twenty Years.*

By Dr. W. G. GIMSON, Witham, Essex.

(*British Medical Journal*, June 13, 1863.)

CASE.—J. C.—, aged 44, a farmer, had never been ill, beyond what he describes as a slight cold.

In 1842 or 1843, the patient after getting very wet and not changing his clothes, suffered from a severe cold, which was followed by long and deep sleeps, the duration of each sleep being more than twelve hours, and the sleep of so profound a nature that it was found impossible to awake him. This attack lasted nine or ten months, and ceased upon the setting in of very wet weather.

In 1848, he experienced a similar attack after catching cold. This attack was more severe than the former, was accompanied by occasional trismus, lasted over a period of eighteen months, and ceased upon the appearance of wet weather.

The present attack dates from the 11th or 12th of May, 1860. At this time the patient got very wet at a fair, and experienced considerable pain in all his limbs, and especially in his back. These symptoms, I am informed, were cured by small doses of Gregory's powder. About a week afterwards, the patient became very drowsy ; and when he was once asleep it was found

impossible to awaken him, the duration of the sleep being from twelve to twenty-four hours.

I was called to see him after the attack had existed for some time, and found him in bed apparently sound asleep, lying upon his left side; breathing quietly, respirations 18 in a minute; pulse 64, regular, feeble; skin generally warm and perspiring; hands and feet somewhat cold; complexion dusky: there was a peculiar twitching of the eyelids, and upon separating them the pupils were seen slightly dilated, and fixed.

After calling loudly in his ears, pulling him over from one side to the other, pinching his nails, &c., he was awakened by touching the conjunctiva with my finger-nail.

He awoke with a slight exclamation of surprise, and sat up. The pulse was slightly accelerated; the countenance heavy; the pupils were dilated, but acting under stimulus of light; his voice was low and husky; the mucous membrane of the fauces was slightly inflamed; his tongue was clean and moist; the bowels had been open twice the preceding evening, while he was awake. His urine was reported to be high-coloured, and turbid on cooling.

He had no pains nor uneasy sensation to complain of, except a deeply-seated pricking across the forehead, generally felt when awake.

He now passes about forty hours out of forty-eight in sleep; and has been known to sleep more than three days without taking food; the longest time, as I am informed, being eighty-four hours.

He generally awakes as the evening approaches; never dreams, or, if he does, the mind retains no impression of so doing; he generally goes to sleep upon the right side, soon turns over on to the left, and so remains until he awakes.

He has never voided urine nor stool even during his longest sleep, although he has several times laboured under diarrhoea during the present attack.

His memory is good; he inquires after friends whom he saw when last awake, and this before time has elapsed, or circumstance has occurred, to recall the fact to his mind. And he is now as capable (when awake) of transacting business, or of any calculation, as he was at any period of his life.

Weather and the state of the atmosphere seem to exercise a direct influence upon him; he is always more wakeful, and remains longer awake during wet and dull weather than at any other time, and he will frequently awake and foretell a coming storm.

During the preceding two attacks he was bled, blistered, &c., and all the experiments were tried upon him which medicine could suggest; but with no avail. My opinion was asked as to the advisability of a seton; and, as I could not see any benefit likely to arise from that mode of treatment, I gave an opinion against it. Upon being asked what I could recommend as likely to be of service in this case, I felt how little I could suggest in the present state of things. The appetite was good; the functions of the stomach and alimentary canal, of the liver and kidneys, were carried on to all appearance efficiently; the heart-sounds were clear but feeble; respiration was free but shallow; the surface was generally warm. What could be of use? I confess I was puzzled; nor could I, by searching through books, or thinking upon the case, arrive at anything like a satisfactory conclusion.

ART. 51.—*Notes on the Use of the Ophthalmoscope in Affections of the Nervous System.*

By DR. HUGHLINGS JACKSON, Assistant-Physician to the Hospital for the Paralysed and Epileptic.

(*Medical Times and Gazette*, October 3, 1863.)

"I have never," says Dr. Jackson, "had the opportunity of examining the retina during a fit of epilepsy under favourable circumstances. I have tried to do it repeatedly, but the difficulties, little and great, are to those who have not tried it inconceivably numerous. The following is the best specimen I can bring forwards. I have already published an examination of the eye in a case of convulsions induced by placing the patient erect; but it may be said that that was a case of fainting only, and could not be accepted as a faithful representation of what takes place in the retina in idiopathic epilepsy.

"A patient, William T., aged 8, had been attending some time under the care of my colleague, Dr. Brown-Séquard, for epilepsy. One day the porter brought the boy—who had just been taken with a fit—into my room in his arms. Unfortunately he did not at once take him to the lamp, and, when everything was arranged for looking, the convulsions had, I think, ceased; but I was so much occupied in finding the optic disc that I noticed little else. The pupil, however, was still very widely dilated, and I caught the optic disc of one eye. It was whiter than normal, and the veins were large and dark. I soon lost it, and then the pupil rapidly became so small that I could not again illuminate the fundus. It is of course of great moment to ascertain the exact stage of the paroxysm when the disc is seen.

"The following are notes of an ophthalmoscopic examination made in two cases in which the patients complained of headache with a little dimness of sight *after* a paroxysm of epilepsy. My object was of course to learn somewhat as to the condition of the intracranial circulation *after* an attack of epilepsy, and also to see the state of the vessels of the retina and the nervous tissue (the optic disc) supplied by them, in what, judging from the patients' statement, would generally be called 'congestive headache.' For, as the arteria centralis retinae may be almost considered as part of the cerebral circulation, we shall, no doubt, learn from studying its varying conditions something as to the condition of the other branches of the internal carotid which supply the brain.

"In a case in which an epileptic complained of slight dimness of sight and headache after an attack of epilepsy which she had had the same day, the note is as follows:—

"She [a girl, aged 8, idiopathic epilepsy—a tongue-biter] had a fit at 8 A.M. I examine by the ophthalmoscope at 10:30 A.M. without using atropine. I find the veins remarkably large and dark, and the arteries also seem darker than normal. The disc is hyperæmic.

"In another case in which, after a fit, there was dimness of sight and frontal headache, the veins appeared very large, and the optic disc was reddened as if flecked with red. It was not uniformly coloured, but somewhat like white bibulous paper slightly smeared by red ink.

"I have examined the retina in a case of wound of the spinal cord, in which there were, on the left side, symptoms like those following section of the cervical sympathetic (ptosis, contraction of the pupil, &c), but I could not find the least difference in the size of the vessels or in the colour of the optic discs, both eyes being under the influence of atropine; besides there was not, nor had there ever been, any defect of sight whatever.

"I have had under my care a case of neuralgia of one side of the face, with contraction of the pupil and slight ptosis. As there was, as well as the contraction of the pupil, considerable narrowing of the ocular aperture, it looked, so far, like a case of paralysis of the cervical sympathetic; and as there was neuralgia on the same side in most of the branches of the fifth nerve and hyperaesthesia to the touch, and as the least exertion made the patient sweat on the affected side, this opinion seemed confirmed. The affection was, I consider, in its mechanism, so to speak, I do not say in its cause, a sort of miniature herpes zoster. There was the neuralgic pain, but the changes of nutrition were represented only by a slight haste of the natural functions of the skin, and not by the uproar of actual inflammation. There was something more than paralysis of the branches of the sympathetic correlated with the sensitive nerves to the iris and face, as section of the sympathetic does not produce neuralgia, but this paralysis was, I believe, *one* link in the chain. Although the pupil was only one-third the size of the other, there was no defect of sight whatever. I did not look for defects of sight because the pupil was contracted, but because there might be changes in the retina similar to those in the iris. The patient could read small print easily, and could also see well in the distance. He had no dimness of sight, no 'clouds,' 'colours,' 'specks,' &c., and not a trace of intolerance of light. He could bear, he said, to look at the fire without any annoyance. I dilated the pupil by atropine, and made an ophthalmoscopic examination. I found no signs of vascularity, the optic discs being as nearly alike as possible. This examination was made soon after the pain had begun, but I examined again a few months afterwards on a relapse of the pain; the pupil being still contracted, I again used atropine. The discs were then quite alike in every respect.

"I should *à priori* have expected to have found some slight defect of sight and corresponding changes in the vascular supply of the optic disc in such a case, and in the case of paralysis of the cervical sympathetic from injury to the spinal cord. The retinal arteries are supplied with sympathetic nerves as well as the iris, but as I could find no change in their calibre and no alteration of colour in the optic disc, and as there was no loss of sight and no intolerance of light, nor, in fact, any departure from a healthy state of the retina, it has occurred to me that the part of the cerebro-spinal axis which

supplies the vessels of the retina (indirectly sympathetic) may be different to that which supplies the iris. If this were so, I should endeavour to ascertain if the same holds good as regards the brain, *i.e.*, if it and the retina are supplied by a different region of the cerebro-spinal axis from that which supplies the external parts of the head, iris, skin, outer ear, &c. The meningeal arteries are chiefly branches of the same great arterial trunks that supply the outside of the head, so that possibly they may be under the control of the same part of the sympathetic system as the iris, outer ear, &c.; whilst the retina and auditory expansion, although outside the cranium, receive branches from the arterial trunks which supply the parts inside, and may be under the government of the part of the sympathetic which supplies the brain."

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 52.—*On Capillary Bronchitis.*

By Dr. HYDE SALTER, Assistant-Physician to Charing-cross Hospital, &c.

(*British Medical Journal*, May 16, 1863.)

Dr. Hyde Salter makes a case of this comparatively rare affection the text of a clinical lecture, and the case and the comments accompanying it are well worthy of quotation :—

CASE.—Francisco Rondi, aged 24, presented himself among the outpatients at the hospital on December 22, 1862. His face was pallid, his expression anxious and exhausted, and he was obliged to be supported into the room. His aspect indicated such depression that at the first moment of seeing him I suggested he might be going to have fever. His tongue, however, had not at all the fever character, and inquiry immediately showed that his symptoms were thoracic. His breathing was very much accelerated, and he had a constant short cough, which, without bringing anything up, gave him no pause or rest. This constant cough somewhat embarrassed our auscultation. However, the signs were so plain and so pronounced that there was no misreading them : they were simply these. Breathing hurried and laborious ; respiratory murmur clear but exaggerated at the apices, but from that situation downwards, everywhere, front and back, supplanted by an abundant, moist, crunching crackle, like squeezing a sponge half saturated with water, especially loud at inspiration, but also audible at expiration. At the upper boundary of this sound the respiratory murmur was heard through the crepitus, but as you descended it became less and less audible and the crepitation louder, which, in the lower half of the chest, drowned everything. It was clearly produced by the bursting of multitudinous bubbles, and resembled pneumonic crepitation in its character—in the idea that it gave—and in being mainly an inspiration-sound ; but it differed from it in not being fine enough—it was decidedly coarser. It was manifestly produced by drawing air through innumerable capillary tubes occupied with fluid. There could be no doubt, then, that the man was suffering from intense and almost universal capillary bronchitis. I at once ordered him into the hospital. His pulse was rather above 120, not small. The respirations I did not count. Although the morbid sound was of so moist a nature, there was no expectoration—the short, incessant,

hacking cough did not bring up a particle of sputum. No sternal pain. Percussion-sound normal. I should mention that the part of the lung that seemed the most free was the upper part of the left lung in front, where, from the clavicle to the fourth rib, the respiratory sound was almost natural, except that it was strongly compensatory.

I ordered *aetheris chlorici* ℥ x; *ammoniae carb.* gr. v; *tincturæ scillæ* ℥ xx; *decocti senegæ* ʒj; to be taken every four hours.

Turpentine fomentations to be applied to the chest, front and back.

This man being an Italian, I could get but little history out of him; but I ascertained that his illness was but of two days' standing previous to his application at the hospital—that it seemed to be the result of cold, and was ushered in by shivering and headache. Our patient is one of the unfortunate race of organ-grinders, and no doubt owes his attack to the mingled wet and cold which has prevailed lately, and to which his occupation has necessarily exposed him.

On going into the wards the next day, I found the patient evidently very much worse. He was manifestly in a state of impending suffocation; dyspnoea extreme—laborious and making sixty-eight respirations a minute; face dusky, or rather, deeply cyanosed; the conjunctiva even pervaded with the same leaden hue, turgid and suffused; lips purple. But he was lying quite flat on his back. I immediately ordered him a bed-chair and a shawl blanket, and had him propped up in bed. This seemed to give him some slight comfort. On examining his chest I found precisely the same signs as on the day before, only still more pronounced, and the area of un-invaded lung still smaller—confined to a small part of the left apex in front. The same fine churning crepitation, mainly inspiratory, everywhere else—above and below, front and back. There was audible, however, now, in addition to the fine sound which alone existed yesterday, a larger moist sound about the middle zone of the lung; indicating either that the larger tubes were implicated, or that the exudation thrown out in the smaller tubes was passing along the larger in its progress towards discharge. The action of the extraordinary muscles of respiration was very strong, inter-sternomastoid and the inter-scalenai pits deeply sucked in at each inspiration. The same sucking in was seen at the lower part of the chest—scrofuliculus and cartilages of the false ribs—in fact, along the entire attachment of the diaphragm. The expectoration had just, and but just appeared: I was shown a single pellet of stiff muco-pus, attached to the bottom of the spittoon, as the only portion that had been spat up. The respiration, as I have mentioned, was 68, the pulse 136; the pulse-respiration ratio, therefore, was exactly 2. The pulse of good volume and strong. Urine scanty, intensely dark, but clear.

I ordered the mixture to be given *every alternate hour*, and the turpentine fomentation to be frequently applied, front and back.

Dec. 25th.—Much worse; cyanosis still deeper; surface damp with perspiration; aspect heavier and more exhausted, at the same time more anxious; the dyspnoea was so intense that the patient could only get a word out now and then. The constant "hack" has ceased, and instead there is a frequent cough in short paroxysms, attended, on each occasion, with the discharge of expectoration. This free discharge has come on since my visit yesterday; I was shown a spittoon containing half a pint of it, and the material is so peculiar as to deserve a particular description.

On taking up the spittoon I not only observed the frothiness of the sputum, but was struck with the lightness of the spittoon, considering how full it was. On pouring the material from one spittoon to another this was at once explained;—the whole consisted of nothing but a sort of foam, and was as spongy and full of air at the very bottom as at the top; it was like

whipped syllabub, or that beaten white of egg and cream which they pour over trifles, only more ropy; but equally spongy, and aerated throughout. I have never seen any sputum exactly like it; generally, however frothy, the froth is confined to the top, and the lower strata are free from it: but this was not so. On pouring it from one vessel into another it "flopped" out in an elongated mass, leaving the bottom of the empty vessel as clean as if it had had nothing in it. There was not the slightest trace of rusty tinge about it. I regret to say I did not examine it microscopically.

Pulse 128, respiration 60; pulse-respiration ratio, therefore, 2·13. The pulse was voluminous, but flabby and compressible. In consequence of the man's increased weakness I ordered him, in addition to the diligent maintenance of the previous treatment and great external warmth, an ounce of wine every alternate hour.

Dec. 26th.—The man is dying. He sits supported in bed with his head thrown back, in a state of unconsciousness, and with a loud rattling respiration; eyes half closed, pupils contracted; face darkly cyanotic, and sweating profusely, as is his whole body. All efforts at rousing him produce hardly any effect. The temperature has fallen, being at the groins 92° Fahr. He ceased to be able to swallow, to expectorate, to cough, or to articulate, early this morning, about eight hours ago; since that time he has been gradually sinking into a state of deeper unconsciousness. Pulse 120, respiration 44; pulse respiration ratio 2·72.

Death took place at six o'clock P.M., four hours after the last visit.

Post-mortem examination, nineteen hours after death.—On opening the chest, the first thing that struck me was that the lungs did not collapse; they maintained their full size in the living thorax; the part of the heart left uncovered did not exceed the natural region of precordial dulness. The upper part of the anterior surface of both lungs presented an appearance of a slight general emphysematous enlargement of the air-cells, and the surface here was pale; lower down this distended condition of the parenchyma did not exist, and the surface was red and vascular—in some parts bright red. The pleural surface of the lungs was uneven, some of the lobules standing out in relief from the others, or rather, I should say, some of them not coming up to the pleural level; but there were none of them anything like "carnified"—all crepitated, and were full of air. On pressing the lung with the finger the impression remained, giving it a doughy, pitting character. On being withdrawn from the body the bulkiness of the lungs, and their refusal to collapse, were very conspicuous. Their posterior parts were seen to be of a chocolate colour, passing into a brighter red both forwards and upwards.

On cutting into the lung the whole structure was seen to be of a deep dull red, everywhere spongy, unusually so, and tolerably dry. Very little material escaped from the cut ends of the air-tubes, but on squeezing the lungs, a viscid frothy muco purulent matter showed itself at innumerable points. I apprehend that the reason why it did not flow from the tubes without pressure was from its great viscosity. On cutting open the larger bronchial tubes, they were seen to be of an even deep rose red, and this colour extended up into the windpipe, where, on a section, the redness of the mucous membrane, in its entire thickness, presented a strong contrast to the whiteness of the cartilaginous rings. The same deep redness extended down to the finest bronchial tubes that could be cut open. Nowhere was there anything like ulceration, or even abrasion of the surface.

On examining the white opaque froth that everywhere filled the bronchial tubes, large and small, it was found to consist of two materials only—pus-cells and columnar epithelium—suspended, of course, in a clear fluid (see

fig.); but so numerous were these bodies that they covered the field with hardly any interspaces. The material was perfectly free from blood-cells.



"Such," says Dr. H. Salter, "is a picture, from beginning to end, as well as I can give it, of this fatal affection. There are many points of interest about it : let us see what they are.

"In the first place, I would indicate to you the points of contrast between such a case as this and one of ordinary bronchitis—what would be called now-a-days, by a pleonasm, their points of differential diagnosis. These are of three kinds ;—as seen in the clinical phenomena, in the physical signs, and in the *post-mortem* appearances. The great distinctive clinical phenomenon was the intensity of the dyspnoea. The respiratory changes were suspended to a degree never seen in ordinary bronchitis : the man was blue from the day of his admission ; death by suffocation was manifestly impending over him from the time he came in till he finally succumbed. The clinical fact, too, of this rapid succumbing was of itself, as I have stated before, a distinctive clinical feature. Again, the sputum we must reckon distinctive ; ordinary bronchitis would never yield such a material. The peculiarity of the physical sign (for there was but one) was : first, its character—that it was a capillary crepitation, non-pneumonic, as distinctive and as individual, in my opinion, as the true crepitation of pneumonia ; secondly, its distribution—that it was not patchy or partial, but universal ; and, thirdly, its singleness—that it was this one sign alone, not, as one gets in common bronchitis, mixed moist and dry sounds of various sizes. The distinctive *post-mortem* appearances were, universal non-collapse of lung, universal florid redness of the respiratory mucous membrane, and universal blockage with a viscid froth.

"I think, too, that the point where the inflammation commenced and the course that it travelled were peculiar. We know that ordinary bronchitis travels downwards. The bronchitis of catarrh, of whooping-cough, of measles, always travels in this direction. A man

catches cold to-day ; to-morrow he has a sore throat ; the next day he is hoarse ; the next, he has sternal soreness, indicating an affection of the lower windpipe and large bronchi ; the next, dry or moist sounds, showing that the affection has reached bronchioe of smallish size. Now, if we may judge by the physical signs, the inflammation in this case would appear to have started in the capillary bronchules, for the first-heard sounds were seated in them ; as the case advanced, the sounds became larger ; and, on examination after death, we found that the inflammatory action had involved the whole of the respiratory mucous membrane, even into the windpipe. I do not mean to assert positively that the different parts of the respiratory mucous tract may not have been affected simultaneously ; and the reason why the crepitus appeared in the smallest tubes first may have been merely because they *were* the smallest, and therefore the earliest infarcted with a sufficient amount of mucus to produce a moist sound ; the larger tubes, from their wider calibre, requiring a more abundant exudation before they could be the seat of similar sounds. But the fact admits of another interpretation ; viz., that the inflammation extended from below upwards, and that the moist sound registered its progress. At any rate, there was none of that 'creeping down' which seems to be the law of ordinary bronchitic progress.

"Another circumstance to which I would call your attention is the extreme *rapidity* of the respiration. On the 24th, it was 68 in a minute—a most unusual rapidity in an adult, and a circumstance that of itself would constitute a most unfavourable prognostic sign. I do not know the law of the rapidity of respiration in the different forms of dyspncea, nor do I know that it has ever been worked out ; but it seems to me to be, approximatively—that the nearer the mischief is to the parenchyma of the lungs, the more is the breathing hurried. Thus pneumonia appears to present us with the most rapid of all forms of dyspncea ; capillary bronchitis, as in this case, gives us a high degree of acceleration ; in ordinary bronchitis, the breathing is generally by no means much quickened ; in asthma, I have often noticed it not at all so ; while in chronic laryngitis, I have seen the respiratory intervals actually lengthened. In this respect, rapidity of respiration appears to be in inverse proportion to respiratory distress and violence of respiratory efforts, both of which I have noticed to be more intense and agonizing the nearer the seat of the difficulty has been to the orifice.

"Closely connected with this is the ratio existing between the rate of respiration and the pulse—what has been called the pulse-respiration ratio. We know that in health we have four beats of the pulse, or four and a half, to each complete respiration ; whereas, in this case, a complete respiration, consisting of an inspiration and expiration, was performed for every two beats of the pulse, although the heart was acting at the rate of 136 pulsations in a minute ; or, if we reckon each respiration as a double act (an expiration and an inspiration being each a respiratory act), there was a respiratory act to every heart's beat, or 136 in a minute. In this case, then, the pulse-respiration ratio was on the 24th exactly 2, instead of 4·5. I am

unable to offer you any facts as to the law of the variation of this ratio—why it should be very much disturbed in some pulmonary affections, and not at all in others. Nothing but close and prolonged clinical observation, directed to this particular object, will furnish the clue to such a law, supposing it to exist. I would only commend to your memories the clinical fact illustrated by this case, and mentioned by Dr. Walshe, that in capillary bronchitis the ratio of the respiration to the pulse is very high.

"Let me also call to your attention, in connexion with this subject, the curious fact, that on three days, the 24th, 25th, and 26th, while the man was going from bad to worse, and the condition of the lungs daily aggravating, the rate of the respiration, and consequently the pulse-respiration ratio, was constantly approaching a more natural standard. Thus the respirations per minute, on these three days, were 68, 60, and 44; and the pulse-respiration ratio 2, 2·13, and 2·72 respectively. This falling of the ratio of respiration as the condition becomes more aggravated, and death approaches, has also been referred to by Dr. Walshe. What can be the explanation of it? Why, as the state of the lungs gets worse and worse, the respiratory changes more and more in arrears, and the demand for air increasingly urgent, should the respiratory efforts become less frequent? I believe the reason to be, that the increasing carbonic narcosis accompanying the deepening asphyxia renders the patient less and less sensitive of the respiratory arrears, and therefore tends to diminish those respiratory efforts of which the sense of arrears, or, in other words, the respiratory distress, is the immediate stimulus. Whether the poisoning of the blood with carbonic acid could have any similar lowering effect on the heart's action, and thus account for the diminished rate of the pulse, I am not prepared to say. I have never directed my attention specially to the effect of cyanosis on the cardiac pulsations.

"In relation to the cough and expectoration, there are one or two points worthy of note—one in especial. Up to two days before his death our patient's cough was dry, hacking, and ceaseless; and he spat nothing whatever. Two days before his death the cough became less uninterrupted, and the expectoration just commenced; the day before his death the cough was paroxysmal, with considerable intervals between the fits, and attended with free expectoration on each occasion; the day that he died there was neither cough nor sputum—both entirely ceased. Now all this is easy of comprehension:—the character of the cough changed with the appearance of the secretion; and the day that he died the spitting ceased, because all power of coughing ceased. But there is one thing that perhaps is not so easily comprehensible,—that moist sound should have existed three or four days before the appearance of the expectoration. There was fluid *in* the tubes, but none came *from* them; and that in spite of constant cough.

"Now you all know that commonly moist sound accompanies expectoration, and expectoration accompanies moist sound. But I would have you distinctly bear in mind that this is not always so—that the two are sometimes divorced—that you may have expectora-

tion without moist sound, or any sound whatever ; and, on the other hand, moist sound without expectoration. The patient's case is an example of the last. You have expectoration without mucons sound when the largest tubes are exclusively the seat of the secretion—tubes so large that the mucus adhering to their sides is insufficient to produce a constriction, or a stoppage adequate to generate a rhonchus or crepitus. Tubes of such a size may have a considerable amount of mucus adhering to them, and yet the stream of air passing through them shall be so little affected that no sound whatever is generated. I have frequently, in cases of large bronchitis, been shown day by day a spittoon with an abundance of mucus in it ; and yet, day by day, close auscultation has failed to detect any morbid sound whatever—all was dry and clear. On the other hand, and this case is an example of it, I have frequently heard a sound asserting the existence of fluid in the air-tubes, and yet sputum there has been none. But, whenever this has been the case, two other things have also been the case; the *seat* of the exudation has been in the remotest bronchial tubes, and the *amount* of exudation has been small. When these two conditions are present, I believe—nay, I am sure—that no expectoration need take place first or last, although moist sounds are constantly heard. The reason is this :—the exudation, having its seat in the most distant recesses of the bronchial system, has to travel over a great length of surface ere it reaches the orifice ; and being small in quantity, and gradually reduced in its passage partly by the desiccating action of the air flowing to and fro over it, and partly by absorption, it ceases to be recognisable, and indeed is entirely removed before it has reached the orifice. We know how common a thing it is, in cases of pneumonia, to hear its characteristic crepitation twenty-four or forty-eight hours before any expectoration appears. We have in this interval a measure of the time it takes for the exudation to travel from one end of the bronchial system to the other. The sputum in most cases of pneumonia, being sufficient in quantity, does at length appear ; but it need not, and if very small in quantity it *does not*, and I have known several cases in which it *has not*—cases of undoubted pneumonia, cases in which the physical signs could not be misinterpreted ; and yet the crepitation has receded, and the patient recovered without any expectoration from first to last. Now this case was at first exactly of this nature, as far as the non-appearance of expectoration associated with moist sounds went : the exudation was scanty and remote, and therefore did not appear for three or four days ; but, increasing in quantity and travelling upwards, on the third day it appeared, and on the fourth day was abundant.

" In contemplating this case, I could not help being struck by the resemblance of the condition and the method of death to that of animals asphyxiated by drowning. In animals so killed, a large quantity of water enters the lungs ; and they die with their smaller air-tubes impassably choked up with a froth, the result of the churning together of the respired air with the water and bronchial mucus. There seems something essentially lethal in this state of

things; animals in whom it is induced invariably die. In the forty-fifth volume of the *Medico-Chirurgical Transactions*, you will find the details of some experiments on drowning, &c., in which I with others was engaged, with the view of ascertaining the best method of treatment of cases of suspended animation. We found that dogs deprived of air in a dry way for four minutes almost invariably recovered, whilst those deprived of air by immersion in water for one minute and a half invariably died. If the dogs asphyxiated in the dry method made, on their release, but a single gasp, they were safe to recover; while the submerged dogs, although when taken out of the water apparently but little affected, soon began to gasp; their breathing became more and more laborious; they staggered, fell over, and in a few minutes were dead. This difference puzzled us at first; but when we came to examine the lungs, its cause was at once manifest. The lungs of the drowned dogs were found full of water, quite sodden, and incapable of collapsing; on cutting them, the water flowed from the cut surface abundantly, and the tubes were found in the state I have just mentioned—choked up with an impassable froth: so that on removal of the dog from the water the source of the asphyxia was not removed—it had been transferred from without him to within him; and instead of being at a single point, at the orifice of the main air-passage, as in the dogs deprived of air by the dry method, it existed at a hundred points—in fact, in every air-tube of the lungs. Just such was the state of this patient's lungs; cut them where you would, out oozed, on pressure, from every bronchial tube, a froth consisting of air and mucus churned up by the respiratory efforts. The immediate mechanism of death from capillary bronchitis is exactly similar to that in a drowned animal."

ART. 53.—*On Pseudo-Gangrenous Bronchitis.*

By M. EMPIS, Physician to the Hôpital de la Pitié, Paris.

(*Gaz. des Hôpitaux*, Juin 2, 1863.)

M. Empis makes a case of this disorder the occasion for a clinical lecture.

CASE.—A man, aged 40, a paper-maker, of good constitution and habitually enjoying excellent health, was seized early in April with cough and abundant expectoration of matter having a fetid odour. These symptoms appeared when he was apparently in the best health, and were unattended by any constitutional disturbance. The patient ate and worked as usual; he was troubled only by the frequency of the cough, by the abundance of the expectoration, and by the daily increasing fetidity of his breath. His fellow-workmen complained of the odour, and this symptom became so unbearable that he was obliged to enter the Hôpital de la Pitié, under the care of M. Empis.

On admission, his breath, especially when he coughed, was extremely offensive. His sputa consisted of glairy transparent colourless matter, very frothy on the surface, holding in suspension a number of small unequal masses of opaque mucus, which floated free in the colourless portion of the

sputa : the whole sputa had a peculiar very disagreeable odour, resembling that of gangrene of the lung. On pouring the sputa into a basin of clear water and stirring the mixture, the opaque masses did not communicate to the water the least muddy tint, as purulent sputa do.

The conformation of the patient's chest presented nothing remarkable ; percussion elicited a normal clear sound in all points of the lung ; on auscultation, there were heard behind, over a space 6 or 7 centimètres in diameter below the angle of the right scapula, some moist mucous *râles*, with unequal bubbles, which were partly displaced by coughing. There did not appear to be any pathological modification of the voice.

The patient felt no oppression, and could make large and deep inspirations without the least pain. His sleep was often interrupted by the cough and by desire to expectorate. He was not able to lie on the left side, from a feeling of suffocation when he did so. He had a good appetite ; ate and digested well ; and had never had fever.

In a clinical lecture on the case, M. Empis remarks that the fetidity of the breath and sputa gave at first the idea of pulmonary gangrene. But the sudden manner in which the expectoration was produced, without having been preceded by any symptoms of disease, and the general state of the patient, so little in harmony with the severity of the general symptoms ordinarily met with in patients affected with gangrene of the lung, forbade the idea of this condition to be entertained. Gangrenous fetidity of the breath and expectoration does not belong exclusively to pulmonary gangrene, and may be met with in certain diseases of the bronchi independent of true gangrene. Laennec more than suspected this, when, failing to find the pathological characters of pulmonary gangrene in patients who had had fetid bronchorrhœa, he suggested that the fetidity of the expectoration depended on a general disposition to gangrene, which excited the mucous secretion of the bronchi. Since that time M. Briquet has pointed out that, in addition to pulmonary gangrene properly so called, there is an affection of the bronchi which resembles true pulmonary gangrene in the special fetidity of the breath and sputa, but which differs from it in its symptoms, in its pathological anatomy, progress, and frequently favourable termination. M. Lasègue has called this condition *curable* gangrene.

The quantity of the expectorated matter varies much. In the present case, it was about a quart daily ; but frequently it amounts to several quarts in twenty-four hours. In cases of long standing it contains, in addition to the elements already described, a greyish finely granular matter, not at all viscous, which is deposited at the bottom of the vessel. It is partially miscible with water, to which, when beaten up in it, it communicates a more or less muddy tint. The fetidity of the breath varies in degree ; on some days it is slight, while on others it is very intense ; it may disappear, in favourable cases, with the catarrhal secretion with which it is connected. The expectoration is not unfrequently preceded by the formation of vomice, which burst in coughing, and discharge their contents.

In most cases, there are no remarkable physical signs ; there may be no general symptoms, or there may be slight febrile reaction ; but in no case is the disease attended with the severe symptoms which ordinarily accompany gangrene. When death occurs, it takes

place as the result of exhaustion produced by the excessive secretion, unless the patient be carried off rapidly by some acute complication, such as pneumonia or erysipelas.

The pathology of the disease does not appear to be positively determined.

M. Briquet believes that the extremities of the bronchial tubes become dilated, and affected with gangrene independently of the other parts of the lung. M. Empis criticises the latter notion at some length, and says that it seems to him more rational to admit that the disease consists in a special pathological alteration of the mucous membrane of the bronchi, in virtue of which they become dilated, while at the same time their internal surface secretes a prodigious quantity of fetid matter. The disease then may be theoretically resolved into dilatation of the bronchi; bronchorrhœa; and gangrenous fœtor. But these are neither successive nor subordinate one to another; they advance equally, and it is their union and indivisibility which constitute the special character of the disease.

ART. 54.—*On the Inefficiency and Dangers of Cauterization in the Treatment of Croup.*

By MM. FISCHER and BRICHETEAU.

(*Medical Circular*, May 20, 1863.)

MM. Fischer and Bricheteau, internes at the Hôpital des Enfants Malades, at Paris, do not absolutely reject cauterization in croup and diphtheria, but the objections which have been adduced to the procedure appear so well founded that they consider themselves justified in stating them.

The difficulty of effectually applying cauterization in children is exceptional, and would not afford a sufficient reason for the rejection of the method, if it checked the formation of false membranes, prevented their reproduction, and could obviate the extension of the diphtheritic secretion. Many physicians now entertain strong views on the subject, and resort to cauterization of the fauces with extreme reluctance. This procedure affords no security against the development of croup; frequently diphtheritic angina has been followed by croup, although active cauterization had been instituted, and had even been successful in effecting a local cure of the pseudo-membranous disease of the throat.

"It frequently occurs," say MM. Fischer and Bricheteau, "that, during an epidemic, an infant is brought to hospital, who for a few hours only has suffered from sore-throat. The disease is therefore observed in its earliest stage. On inspection of the fauces, a small diphtheritic patch is discerned on the surface of one tonsil, and cauterization is resorted to; but a few hours later a second pseudo-membranous deposit is detected on the other tonsil, and so on."

"It has also been remarked that cauterization in no wise affects the primary cause of the complaint, which is of a general character,

with a tendency to local manifestations on the mucous lining of the respiratory organs. The pustule which would subsequently become a Hunterian chancre may legitimately be destroyed, but what would be the advantage of cauterizing eethymatous pustules, consequent on infection of the system? Syphilitic eethyma is but the result of a general taint, and false membranes likewise are but the local expression of the diphtheritic diathesis. The peculiar virus or miasma, the morbid poison which gives rise to diphtheria, is unknown to us, but betrays its existence by its consequences. It is the cause, and not the effect, the practitioner should contend with."

MM. Fischer and Bricheteau believe that the morbid intoxication precedes the formation of the false membranes. They have on several occasions observed *ab initio* symptoms, which attested the presence of the virus in the blood, a rapidly fatal termination supervening, although but a very few insignificant greyish spots were discernible in the pharynx. If, as has been argued, the infection were consequent on the diphtheritic exanthema, its manifestations should be proportionate to the number and extent of the pseudo-membranous deposits, from which the poison is alleged to have been derived. But this is not the case; the most malignant forms of diphtheria are not those in which the local symptoms are most considerable. The treatment adopted at the Hospital for Infancy also suggests to the authors another sagacious remark. Tracheotomy is very frequently resorted to in that institution; after the performance of the operation, when respiration has been re-established, the entire treatment consists in watching the condition of the pulmonary organs, and in supporting the patient. Very little further attention is wasted on the false membranes; they are never touched with any caustic, no local remedy is applied, and the confidence thus reposed in the efforts of nature has never been betrayed. Chloride of potash is, however, prescribed for a few days after the operation.

The previous remarks are adduced for the purpose of showing the inefficacy of cauterization; it is further alleged to be a hazardous practice.

The application of muriatic acid has induced gangrene of the fauces, and M M. Blache and Guiet have related cases in which cauterization was followed by fatal spasmotic contraction of the larynx. The method, moreover, is open to the objection of causing violent irritation, and of promptly and fatally exhausting the strength of the patient by determining energetic effort and temporary excitement of vital powers. When tracheotomy becomes necessary, the previous application of escharotics has another great disadvantage. The necessity of supporting the system is then universally acknowledged, and active cauterization gives rise to an unconquerable aversion to food, and to considerable pain in deglutition. The children obstinately refuse to take nutriment, and if they have the good fortune to escape the perils of abstinence under these unfavourable circumstances, their recovery is materially retarded. Cauterization with muriatic acid is especially injurious, and one of our unfortunate colleagues bore witness, before his death, to the tortures inflicted by the use of this agent.

MM. Fischer and Bricheteau's paper shows that the local remedies in croup and diphtheria should be selected from the class of astringent substances, and not from the list of escharotics. Chlorate of potash, alum, and tannin, should be insufflated or prescribed in gargles. If necessary, a solution, containing one quarter of its weight of nitrate of silver, may be applied with a brush; but the lunar caustic, which imparts a greyish colour to the mucous membrane, and may prevent the surgeon from detecting genuine patches of diphtheria, should be cautiously avoided.

Inhalations of medicated and pulverised fluids may also be resorted to with benefit. The composition of such fluids may vary *ad infinitum*, and the system has the twofold advantage of conveying the remedies directly into the respiratory passages, and as M. Barthez has observed, is a perfectly innocuous procedure, which interferes in no wise with tracheotomy, should the operation be indispensably required.

ART. 55.—*On Asthma.*

By Dr. J. BURDON SANDERSON, Assistant-Physician to the Middlesex Hospital.

(*Medical Times and Gazette*, May 16, 1863.)

After stating that the definition of asthma as a species of disease must be founded exclusively on the study of its development during life, with but little assistance from morbid anatomy, the author proceeds to describe the phenomena of an attack, dwelling particularly on the nocturnal onset of the affection, and the complete remission of all the symptoms during the intervals. The characteristic elements of asthmatic dyspnoea are stated to be, (1) excessive expansion of the chest; (2) resisted but forcible efforts to expire; (3) diminution of the exchange of air in the chest, and consequent venous condition of the blood. In the asthmatic state the chest is arched forwards in extreme inspiration, the diaphragm sinks below its normal level, so that its power is lost, while the almost fruitless efforts to renew the air in the chest are accomplished by elevation of the upper ribs. The expiratory muscles of the abdominal wall are in excessive action; but, in spite of their efforts, air is expelled from the chest with extreme difficulty and in small quantity. The condition of the blood which is thus produced gives rise to the sensation of want of breath, and impels the patient to make conscious and voluntary efforts to get rid of the used air, which is as it were locked up in his chest, so as to enable himself to obtain a fresh supply. In order to arrive at an explanation of this remarkable state, so different from every other form of dyspnoea, the circumstances must be considered under which it is developed. Asthma comes on during those hours of the night in which sleep is ordinarily most profound. At night the respiratory function is modified; the quantity of air exchanged is diminished. This diminution is partly, though not entirely, dependent on a change in the respiratory function of the

vocal cords, which in nocturnal breathing approach each other more closely than in the waking state, that muscular action by which they are kept apart is relaxed. The more profound the slumber the greater the relaxation, and the narrower the chink of the glottis (*e.g.*, in snoring expiration). Assume for a moment that this natural relaxation becomes excessive. As the laryngeal resistance is normally greater to the egress than to the ingress of air, the chest falls more and more with each respiration, the inspiratory power of the diaphragm lessens, the exchange of air is diminished, the blood becomes less arterial, and thus, without any agency beyond the intensification of that condition of respiration which exists in natural sleep, all the elements of asthma are developed. In short, it is possible to account for asthma as a result of disorder in the respiratory function of the glottis. But if it be remembered that the muscular fibres on which this function depends are governed by the same nerve as the contractile fibres of the lung tissue (as is shown by the experiments of Douders and others), it will be readily admitted that if in asthma the respiratory fibres of the glottis are relaxed, those of the lung are in a similar state of relaxation, which would afford an additional explanation of the remarkable dilatation of the chest. This view accords perfectly with what is known as to the intimate relation of asthma and emphysema. Emphysema cannot be regarded as the cause of asthma; it would even be more correct to speak of it as its consequence. Emphysema results from resisted but powerful efforts on the part of the expiratory muscles to expel air from an expanded lung. This is precisely the state of things in asthma. But the relation between the disease and the lesion is rather that of community of cause than of consequence. Temporary over-expansion of the lung is a constituent of asthma; permanent expansion cannot exist without emphysema. Under the head of "Diagnosis," the author distinguishes between asthma and spasmodic dyspnœa, in all forms of which the relation between the inspiratory and expiratory act is the reverse of that which holds in asthma—*e.g.*, in the spasmodic dyspnœa of plthisis, acute bronchitis, and dwells on the importance of determining the relative duration of the inspiratory and expiratory act, which may be best affected, not by listening to the chest, or observing its movements, but by the auscultation of the larynx. As regards treatment, the author has found that no remedies were useful during the attack of asthma excepting stimulants, of which ipecacuanha in large doses, alcohol, and coffee are instance as most important.

ART. 56.—*On the Management of Pulmonary Tubercllosis,
with Special Reference to the Employment of Alcoholic
Stimulants.*

By Dr. AUSTIN FLINT.

(*American Medical Times*; and *Dublin Medical Press*, July 29, 1863.)

This paper, which was read before the New York Academy of Medicine, consists mainly of a clinical report, based upon sixty-

two cases of arrested tuberculosis. These cases are analysed and compared as regards points of agreement relating directly and indirectly to the management, the main objects of inquiry being the evidence afforded of self-limitation, the influence of hygienic measures, the agency of remedies, and the importance of alcoholic stimulants in determining the arrest of the disease. Dr. Flint considers that the disease is arrested whenever the general and local symptoms show it to be non-progressive for several consecutive months. After the arrest, the recovery may or may not be complete. In many of the cases the recovery was complete, while in others a certain amount of cough and expectoration continued for a considerable period of time, in two cases for more than twenty, and in one case for forty years.

For convenience of analysis he arranges the cases in three groups. 1. Those in which no curative or hygienic methods of management were employed. 2. Those cases in which hygienic measures were employed. 3. Cases in which remedial measures, including alcoholic stimulants, were supposed to have had a curative influence. 1. In the first group seven cases are collected, of which four recovered entirely. 2. The second group includes twenty cases, in twelve of which the recovery appeared to be complete, in eight the arrest of the disease was not followed by complete recovery within the period that the condition of the patients severally was known. The ages in this group ranged between nineteen and fifty years, and seventeen of these were males. In only four of the cases are there any grounds for supposing that climate had any curative influence. The most important point of agreement developed by the analysis of this group of cases relates to change of habits as regards exercise and out-door life, and the agreement in this respect is highly significant. 3. The third group embraces thirty-five cases. Only one of these cases was treated with tonic remedies, exclusive of cod-liver oil and alcoholic stimulants. In four tonics were employed in conjunction with alcoholic stimulants, and in two tonic remedies were conjoined with cod-liver oil; aleoholic stimulants and cod-liver oil were employed conjunctively in eight cases. Stimulants, oil, and tonics were used in one case. The curative remedies employed were only three in number; cod-liver, alcoholic stimulants, and tonics of iron and quinine. In five of the thirty-five cases, the curative treatment consisted exclusively of cod-liver oil; in two of these the symptoms entirely ceased. Of these thirty-five cases, in fourteen the curative treatment consisted exclusively in the use of alcoholic stimulants; of these fourteen cases of arrest, in nine the recovery was apparently complete. Generous living was inculcated and adopted as far as practicable in all the cases.

The most striking and valuable of the results of the analytical study of these sixty-two cases is their almost uniform agreement as regards change of habits with respect to exercise and out-door life at the time of the arrest. Excluding the seven cases of the first class, and two in which the facts with respect to this point were not noted, of the remaining fifty-three, in all save three, the histories show a greater or less change of habits to have been made; and in

many cases the change consisted in relinquishing sedentary callings for other pursuits, in order to carry out more effectually the desired reformation. Regarding the indications for the use of stimulants, Dr. Flint says:—

“ If their immediate effect be that of a cordial stimulant, that is, if they produce a sense of comfort; if they are followed by a feeling of increased strength, and a greater disposition to exercise; if they do not excite unduly the circulation or nervous system, I believe we may expect benefit from their use. *Per contra*, if their immediate effect be discomfort; if they are followed by a feeling of increased weakness and less disposition to exercise, and if they excite unduly the circulation or nervous system, I believe they will not do good, and may perhaps do harm.”

With respect to the formation of habits of intemperance, he remarks:—

“ In not one of the cases which I have reported has there been developed, so far as I know, a craving for stimulants, or a reliance upon them, rendering it difficult to relinquish their use. I have had my attention directed particularly to this point of observation, and I have not yet found an instance in which there was any apparent reluctance to discontinue the use of alcoholic stimulants whenever it was deemed advisable. I have not yet found an instance in which their use was continued after they were declared unnecessary; in short, up to this time I am not aware that in a single case among the many cases in which I have advised alcoholic stimulants, has a patient fallen into intemperate habits. * * * I certainly am not prepared to advocate the use of alcoholic stimulants as a prophylactic; that is, to sanction indulgence among those who may believe or fancy that they are in danger of becoming tuberculous. I would not advise their use in doubtful cases; they should follow a clear diagnosis, based on signs and symptoms. In persons with the unfortunate idiosyncrasy which leads to an irresistible craving on the slightest indulgence, the immediate effects would always contra-indicate their use in conformity with the rules which should govern our practice in cases of tuberculosis. And, finally, when employed as a remedy, they are not to be taken as a means of conviviality, or for any other than a curative influence.”

ART. 57.—*On Chronic Congestion of the Lungs.*

By M. BOUCHUT, Physician to the Hôpital des Enfants Malades at Paris.

(*Journ. de Méd. et Chir. Prat.*, Oct. 11, 1863.)

M. Bouchut makes the case of a girl, æt. 13, recently admitted into the hospital with which he is connected, the text for some important remarks upon this subject.

The child was the offspring of parents who had never displayed any tendency to pulmonary tuberculosis, and although herself feeble

and anæmic, she had not previously suffered from any serious disease. Two months before her admission cough set in, and once she threw up a small quantity of blood. The cough is now painless, and unattended with expectoration; on percussion slight dulness is discovered in the right supra-spinous fossa, and on auscultation the vesicular murmur is found to be evidently weaker beneath the left clavicle, without any increase in the length of expiration, without any superadded sounds, or increased resonance of the voice. In the corresponding region of the right side, the respiratory murmur is louder, and posteriorly, in the right supra-spinous fossa, the expiration is protracted, and the voice-sound louder, but no rhonchi whatever are audible. The child, moreover, is in a debilitated and anæmic condition, and occasionally subject to feverishness in the evening.

Guided by these signs, which for ten days were invariably found the same, M. Bouchut, instead of pronouncing the case to be one of tubercular consolidation of the apex of the lungs, expressed his belief in the presence of chronic pulmonary congestion.

This affection, already described by M. Andral, M. Darralde, and other observers, consists in a degree of hyperæmia, which prevents the lung, partially collapsed, from expanding to receive the usual amount of air, and induces a condition nearly approaching to inflammation, with induration of the pulmonary structure and consequently defective hematosis.

An analogous congestive state may occur in the brain, liver, and other viscera, and clinical observation demonstrates the possibility of its existence in the lungs. M. Bouchut met with a case in point in a little girl aged five years, who had recently recovered from whooping-cough, but who was continually attacked with feverishness without any obvious cause. She still coughed occasionally, and was losing flesh. By careful and repeated examination of the chest, dulness was discovered in the right supra-spinous fossa, and in the same region, the respiratory murmur was found to be weak, the expiration protracted, and the resonance of the voice increased. No improvement in this condition being observable after an interval of six months, the child was sent to the waters of Saint-Honoré, in the Département de la Nièvre. After a short residence at the springs amelioration set in, and a complete cure was effected the following year, by a second visit to the spa.

Cases of the same kind are not unfrequent after whooping cough, measles, pneumonia, or simple bronchitis. When they occur in M. Bouchut's practice, he invariably prescribes change of air, sea-bathing, the mineral waters of Saint-Honoré, cod-liver oil, counter-irritants, &c., and he has often had the good fortune of thus effecting a cure of what was supposed to be incipient phthisis. The remedies above enumerated, of course, would fail to remove tubercular consolidation; the morbid condition could not disappear in a few weeks or months, under the influence of change of air and mineral waters, and hence M. Bouchut conceives the lesion to consist in chronic pulmonary congestion. At the military hospital of Val de Grâce, in Paris, M. Champouillon has observed many facts which confirm this

view, and has seen hundreds of soldiers presenting all the signs of the early stage of consumption, who recovered perfectly during a six months' leave.

Morbid anatomy further corroborates the suggestions of clinical experience; when persons suffering from bronchitis of a suspicious character, die from some intercurrent disease, pulmonary *sclerosis* is occasionally discovered; its physical signs during life having been precisely the same as those which would have been caused by tubercles, viz. comparative dulness on percussion, weakness of the respiratory murmur, prolonged expiration, and increased resonance of the voice.

The foregoing remarks imply that the discrimination between the two diseases is necessarily difficult, and reposes upon the previous history of the case; but knowledge of the precedents does not entirely dispel the obscurity of the diagnosis. The embarrassment of the practitioner increases when permanent bronchitis is also present as a complication, giving rise to copious mucous secretion, and to moist and sonorous rhonchi. We are fortunately in possession of a valuable touchstone, supplied by cold or warm sulphurous waters, assisted by country air. Those who are experienced in the use of those waters are well aware that they do not cure tuberculosis, but are truly beneficial in chronic pulmonary congestion.

This form of hyperæmia is an asthenic affection frequently connected with scrofula or herpetic tendencies, like many local chronic congestions situated in other organs. Under these circumstances, tonics and stimulants are most appropriate at all ages. Anodyne beverages and mixtures, together with cod oil, bark wine, arseniate of soda, counter-irritants, and generous diet and wine will be prescribed with benefit, and when the season and the circumstances of the patient admit, change of air and saline or sulphurous waters.

M. Bouchut then alludes in detail to each element of the treatment above recommended.

Cod-liver oil, he says, is essentially a winter medicine, and may be replaced by goose-grease, the fat of roast pork, or butter and salt. If the cod-liver oil induces diarrhoea, it should be exchanged for rapidly increasing doses of bark wine, the state of the bowels being, at the same time, carefully watched.

One of the best tonics, in M. Bouchut's opinion, is the arseniate of soda. In the case of a little girl, aged nine years, who for six months had been affected with a troublesome cough, and in whom he suspected the presence of chronic pulmonary congestion, he prescribed with much benefit the following medicine, to be taken in teaspoonfuls in the course of each day:—

R. Sodæ arseniatis, gr. $\frac{1}{10}$;
Oxym. scillæ, 5*x*;
Syrupi papaveris, 3*ij*.

The oxymel of squill is an excellent expectorant which, in M. Bouchut's opinion, is not estimated at its full value. In general he exhibits the arseniate in the shape of a syrup, viz.:—

R. Sodæ arseniatis, gr. j.

Syr. cinchonæ, ʒx.

Dose: from one to five teaspoonfuls daily.

This remedial agent restores appetite, improves the circulation, invigorates the system, and may be useful in the more advanced stages of phthisis; it should, however, be administered in the absence of fever only. If feverishness exist, it should in the first place be subdued with antimonials and emetics.

Cutaneous counter-irritation is an important element of treatment. Frictions night and morning with croton oil, or repeated blistering of the chest will be found beneficial, or better still, the application of tincture of iodine over the walls of the chest.

The Spas recommended by M. Bouchut are those of Enghien, Pierrefonds, Eaux-Bonnes, Eaux-Chaudes, Saint-Sauveur, Cauterets, or Luchon in summer, and in winter those of Amélie les Bains and le Vernet. The waters should at first be exhibited in small doses, or inhaled in the shape of spray, or prescribed in the form of very warm baths, in which the subject should be immersed up to the waist only. This plan, which is much used at Mont-Dore, is extremely beneficial as a means of producing counter-irritation. It induces congestion of the blood-vessels of the lower parts of the body, and actively promotes the resolution of the congestive or inflammatory condition of the lungs and bronchi.

ART. 58.—Cases of Whooping-cough treated with Bromide of Ammonium.

By Dr. HARLEY, Assistant-Physician to University College Hospital.

(*Lancet*, September 26, 1863.)

In using the bromide of ammonium in these cases, Dr. Harley's object was to obtain the anaesthetic action upon the larynx and pharynx which Dr. Gibb has lately shown to be produceable by this medicine. He wished to do away with that part of the cause of the spasm which depended upon over-sensitiveness of the larynx and pharynx, and to a certain extent he seems to have been successful.

CASE 1.—February 9th, 1863.—Eliza F.—, a tolerably well-developed child, aged eighteen months, who had whooped for eight days, was first treated with five minimis of tincture of belladonna and a quarter of a grain of sulphate of zinc in two drachms of water thrice a day.

Feb. 16th.—Cough just as before. There is dryness of the throat, showing that the belladonna has produced its specific effect. The treatment is now (on the fifteenth day of the disease) to be changed to five grains of the bromide of ammonium dissolved in water three times a day.

19th.—Cough, or rather the whoop, is already much better. To repeat the mixture.

27th.—The child no longer whoops, but has still a slight cough.

The bronchitic cough lasted till the 20th of March, when the child was dismissed as cured.

CASE 2.—Ellen S—, aged four years and four months, was brought to the hospital on the 5th of May. She had whooped during seven weeks, and had an ordinary catarrhal cough for fourteen days before the whoop commenced. She now whoops every time she coughs, which occurs about three or four times an hour, although she occasionally passes about an hour without coughing. The child was very stout before her illness began, and, although she is not yet emaciated, the mother says that she has lost a great deal of flesh. Skin hot; appetite very bad; bowels usually open twice a day. To have six grains of bromide of ammonium in two drachms of water three times a day.

May 8th.—To-day the mother states that after leaving the hospital on the 5th she carefully watched the child, and found that she whooped thirty-two times in three hours; but since taking the medicine the whoop has very much diminished, and to-day (third day of the bromide) the child has passed three hours without either coughing or whooping. To repeat the mixture.

This patient was not again brought to the hospital.

CASE 3.—Feb. 26th.—H. W. O—, aged four years, began to whoop on the 22nd (four days ago). Had a catarrhal cough for ten days before he began to whoop. To take six grains of the bromide of ammonium in two drachms of water three times a day.

March 2nd.—The child has very much improved. Has only a very slight cough. The whoop has ceased. This is only the fourth day of the treatment, and the eighth of the disease.

CASE 4.—March 2nd.—Brother (aged two years?) of last patient is now ill. He began to whoop on Feb. 25th (six days ago). He is also to be treated with the same medicine; but in order to try the effect of very small doses, only one grain and a half are to be taken thrice a day.

March 20th.—Child still whoops, though not so much as before.

27th.—Whoop ceased two days ago (twenty-fifth day of treatment, thirty-first day of the disease).

CASE 5.—March 27th.—Third child (aged three years) in same family began to whoop on March 22nd (five days ago). Whoops three or four times a day, and four or five times during the night. As this child was under the same hygienic conditions as the two preceding cases, it was thought an excellent opportunity of still further testing the effects of different doses of the bromide, and accordingly three grains were ordered to be taken three times a day.

May 1st.—The mother did not bring the child back till to-day, and gave as her reason the fact of the child having ceased to whoop three weeks ago; that is, on the fourteenth day of the treatment, and the nineteenth of the disease. The catarrhal cough, however, still continued, and for this ipecacuanha wine and camphor mixture were ordered. The cough ceased a week later.

Dr. Harley believes that the remedy does not act by removing the cough, but simply by preventing the occurrence of its chief and most disagreeable symptom—the whoop. It also appears that the larger the dose of the bromide the more speedy is the cure. To remove the catarrhal after-cough, an ordinary expectorant is all that is required.

ART. 59.—*On the Treatment of Whooping-cough by Ergot of Rye.*

By Dr. O. GRIEOPENKARL.

(*Deutsche Klinik*, No. 11, 1863; and *Gaz. Hebd. de Méd. et Chir.*, Sept. 25, 1863.)

In 1856, a boy, æt. 6, a patient of Dr. Griepenkarl's, suffering from whooping-cough, was seized with convulsive ergotism, a malady then endemic in the neighbourhood where he lived—Lutter. As soon as the convulsive symptoms from ergotism made their appearance, the characteristic whoop of the cough disappeared, and gave place to simple piping inspirations. Fifteen days later, the patient was well—of the ergotism as well as of the whooping-cough. Since this time, Dr. Griepenkarl has tried ergot as a remedy in more than 300 cases, and he speaks most confidently as to the results, if only the commencement of the treatment be deferred until the third week of the malady, or later still, if any complications of the disorder have yet to be mastered. He prefers a syrup made by boiling from 1 to 2 grammes of coarsely powdered ergot in water, until 32 grammes remain to be strained off, and then sweetening with 48 grammes of sugar; and this syrup he gives to a child of from 5 to 7 years, one teaspoonful every two hours for a fortnight, and then again for a few days, after an interval of a week or ten days. As to the success of the treatment it is not possible to form an opinion from the data given, but there is nothing to lead one to believe that it is so encouraging as Dr. Griepenkarl would have us suppose.

ART. 60.—*A Cheap Spirometer.*

By Dr. W. E. BOWMAN.

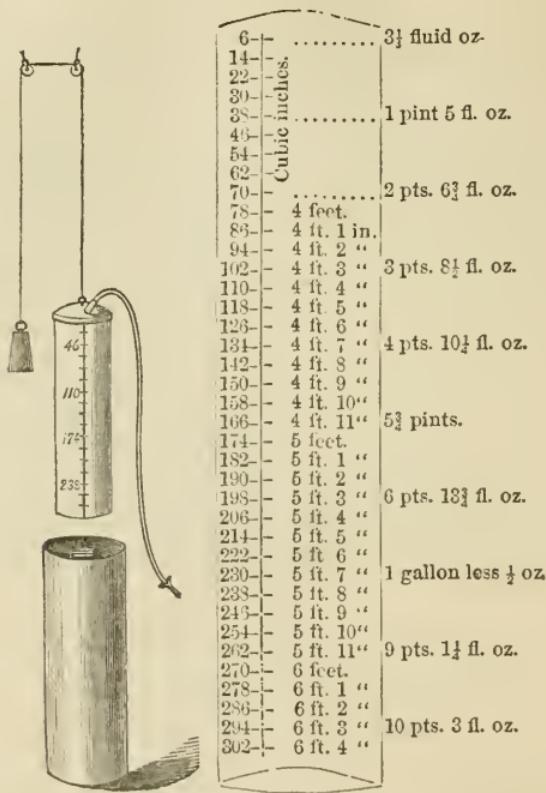
(*Canada Lancet*, June 15, 1863.)

A cheap spirometer may readily be made from two tin vessels similar in shape to the ones figured in the accompanying woodcut; the one should be about 20 inches long and 6 inches in diameter, and the other 18 inches long and 5 inches in diameter. The latter may be graduated into spaces of eight cubic inches by means of our ordinary gallon measure, which is the old wine measure of Great Britain, and the one that is adopted by the United States Pharmacopœia; it consists, as everybody knows, of 8 pints of 16 ounces each, the ounce measuring 1·8 cubic inches.

Having placed the smaller vessel perfectly upright, measure into it a gallon of water, less half an ounce, and with a rule ascertain the precise distance from the surface of the liquid to the brim of the vessel, then placing this measure outside of the tin, mark the height of the water as 230 c. in. In a similar manner with half a gallon and 10½ fluid ounces, mark 134 c. in.

Next divide the space between these two points into 12 equal parts, which will be measures of 8 c. inches each, and with the com-

passes continue the graduation upwards and downwards, placing the figures on the inverted vessel as here shown. If its diameter be everywhere alike, the measure must be correct; its accuracy however may be readily tested by the annexed subdivisions of the same measure. The pulleys and counterpoise may now be adjusted to the graduated tin.



Next fill the larger vessel with water so that the smaller may be just covered when inserted as low as possible into it, and mark the height of the water on the inside of the larger tin. Then raise the small one gently until the 174 c. in. line appears even with the surface of the water, and make a second mark of its level. Finally, put the third graduation in the large tin when the smaller is raised completely out of it.

Lastly, affix two or three feet of flexible tubing and a mouth-piece to the top of the small tin, and the spirometer will be ready for use.

The graduation inside of the larger vessel is to detect and obviate any difference in the level of the water within and outside of the rising vessel, which after receiving the breath should be depressed until the water is at its proper level, the tube being closed by the fingers during the adjustment and reading off.

With this scale as a guide the York Glass Company of England has made a beautiful spirometer of this form entirely of glass, and correctly graduated into cubic inches. It differs somewhat from this one, in having a perforated glass stopper in the centre, to which the silk-covered tubing is attached; and also in having two cords, one each side of the stopper, and four pulleys which prevent it from turning. Thus arranged and mounted on handsome brackets, apart from its usefulness in ascertaining the presence and progress of phthisis, it forms an elegant addition to a surgery.

(c) CONCERNING THE CIRCULATORY SYSTEM.

ART. 61.—*On Pericarditis consequent upon Pyæmia.*

By Dr. KIRKES, Assistant Physician to St. Bartholomew's Hospital.

(*Medical Times and Gazette*, October 25 and November 1, 1863.)

Dr. Kirkes dwelt upon this subject in one of the Gulstonian Lectures at the College of Physicians, delivered by him in 1856. In the present paper he cites another case, and makes certain comments, and the case and the comments are full of instruction:—

CASE.—A boy, about 16 years old, while engaged in a fight with another boy, received a violent kick on the left shin, about an inch below the knee. This occurred on August 22nd. On the 26th he presented himself at the hospital, and showed his leg to Mr. Marsh, the house-surgeon on duty. There was a red, tense swelling over the injured part; and Mr. Marsh, being struck with the peculiar haggard, anxious look of the boy, admitted him into the hospital, under the care of Mr. Savory. On auscultation, a well-marked pericardial friction sound was detected. The patient complained of general pains in the limbs, and of feeling very ill. There was, however, no swelling, redness, or particular tenderness of any joint, and, moreover, no rheumatic odour. The skin was hot, the pulse about 120, and the tongue coated with a yellowish fur. On the day after admission a few small pustules were detected on the front of the chest and abdomen. The swelling over the left shin was incised, and much puriform matter evacuated, and the patient was supported with bark, wine, and good nourishment. The nervous agitation, however, increased, the symptoms became more typhoid, signs of copious pericardial effusion ensued, and the boy died exhausted on the 29th, three days after admission, and seven from the receipt of the injury.

On post-mortem examination, the pericardial cavity was found distended with turbid serum, while flakes and curdy masses of recent lymph were spread over the surface of the membrane, which was intensely vascular. The muscular tissue of the heart, when cut in two, was found generally softer than natural, especially about the left ventricle. Together with this general softening, there were numerous buff-coloured patches, as if resulting from some change in the tissue rather than from actual deposit: in many places such discoloured parts were much softened, and several were even reduced to diffused, purulent-looking masses, varying in size from pins'-heads to split-peas. This softened material, when removed, left little cysts or sacs in the substance of the muscular wall. Such masses were especially abundant about the base of the heart, and in the walls of the left ventricle. Several were close to the pericardial surface of the heart, and one at least, detected by Dr. Andrew, appeared to have opened into the interior of the left ventricle.

Microscopic examination of the softened material exhibited little else than an abundance of oil globules of all sizes; much granular matter; and many shreds of muscular tissue, the majority of which presented more or less decided evidence of granular degeneration. No actual pus corpuscles were observed. All the valves of the heart were healthy.

Within the lungs were numerous ordinary pyæmic deposits, many of which were reduced to collections of soft, purulent-looking matter. Over several of these which were near the surface of the lungs, were signs of recent pleurisy in the form of soft lymph over highly-vascular membrane. Several purulent-looking deposits were also found in the soft pulpy spleen, and on the surface of each kidney. The liver was free. Much mischief was found about the left shin: the soft tissues about the seat of injury were infiltrated with greyish, purulent-looking, blood-stained fluid; similar fluid existed between the periosteum and the bone, which were separated from each other all around the shaft of the tibia for a considerable distance beyond the seat of injury; the tibia itself, at the part where the blow was inflicted was very vascular, and rough to the touch. The saphena vein was free; the femoral not examined.

"Cases of the above kind," says Dr. Kirkes, "where inflammation of the pericardium is found associated with purulent deposits in the muscular tissue of the heart, have usually been described as cases of carditis, or acute pus-depositing inflammation of the muscular substance of the heart. But I believe now that this explanation is erroneous, and that the muscular tissue of the heart is not primarily at fault, but is merely, by accident as it were, and in common with other parts of the body, the seat of secondary formations in consequence of contaminated blood, and that the attendant pericarditis is merely an accident of the proximity of some of the deposits to the surface, and, it may be, of their bursting into the cavity. Let me state some of the principal grounds for this opinion, which it is especially desirable to do, since a right appreciation of the nature of this structural change in the heart is very important in relation to the treatment of such cases; for as they are usually associated with some primary affection of a bone or joint, and as other joints are liable to be secondarily affected by subsequent deposits or formations of pus in or around them, these cases are extremely liable to be mistaken for cases of rheumatism, from which disease, however, they essentially differ, and require a totally different treatment.

"1. That the changes in the muscular texture of the heart are induced by local formations or deposits from contaminated blood, and are not the result of purely inflammatory processes, seems evident from their very nature and character as exhibited on close examination. For, independently of the fact that muscular tissue rarely inflames, except as the result of direct injury, the appearances presented by the changes in question are much more like those presented by secondary formations in other organs than the effects of simple inflammation. Thus, they often occur as congested spots or blotches, with a pale yellowish-brown or buff-coloured centre, or as fawn-coloured streaks, or small, yellowish, isolated points of pus in the midst of firm and apparently healthy muscular tissue. Whatever be the character presented by the deposit, indeed, the intervening muscular tissue itself seems free from disease, or not more congested

and softened than the presence of the foreign deposit might account for. When the deposits are very numerous and close together, the congestion and infiltration of the intervening fibres is, as might be expected, very considerable; but when the deposits are few in number and far apart, the intermediate tissue appears scarcely changed from its ordinary state.

"2. Again, the development of symptoms referable to the heart was, in most of the cases of so-called carditis which I have observed, clearly preceded for several days by some cause calculated to give rise to contamination of the blood, such as inflammation and suppuration of a bone or joint ensuing idiopathically or resulting from injury, as in the three cases just narrated. In one very marked instance, the whole mass of blood had been vitiated by the bursting of a large abscess in the substance of the heart into the interior of both ventricles.

"3. Moreover, in all the fatal cases of the kind which I have examined after death, the lungs and various other parts presented abundant secondary formations, similar to those in the heart, a circumstance favouring the view that they had all originated in the same general cause—namely, a contaminated state of the blood.

"4. That the inflammation of the pericardium met with in all the instances was the direct consequence of the changes in the muscular tissue of the heart, was rendered probable by the fact that in all of them some portion of the deposit was found close to the external surface of the heart; that in some the pericardium was softened over an abscess, and in others the collections of pus projected above the surface, and had, probably, in some cases, given way, and entered the cavity. The mere proximity of an abscess, however, independent of its bursting, would doubtless be sufficient to induce inflammation in a membrane so sensitive as the pericardium. We see a like effect sometimes when any other foreign substance—such as a mass of cancer, especially when softening—protrudes into the pericardium, or when this membrane is the seat of tubercular deposit.

"It may, then, I think, be fairly assumed that inflammation of the pericardium, when found associated with deposits of pus or like matter in and near the surface of the heart, is the direct result of such deposit, and not an independent or simply associated affection. The occurrence of pericarditis in connexion with such deposits in the heart, and with a general vitiated state of the blood, such as sometimes occurs after injuries or surgical operations, is worthy of being specially noticed, for it furnishes another set of conditions under which pericarditis may ensue. Among the recognised causes of pericarditis, rheumatism, albuminuria, cancerous and tubercular deposits in or about the pericardium, justly occupy the highest rank. Instances of pericarditis occurring independently of any of these causes are usually regarded as exceptional and isolated cases, which scarcely admit of being grouped into any special class. But it is probable that many of these isolated and obscure cases are of the kind just considered; namely, the result of secondary formations in the muscular substance of the heart, consequent on vitiated blood,

"It is chiefly because the class of cases here specially noticed are in many respects so very like, and yet in nature so really different from, cases of ordinary acute rheumatism, that it is so peculiarly important to read them aright. The persons in whom the series of morbid phenomena just pointed out, namely, primary affection about a bone or joint (or other local cause of blood-poisoning) and secondary mischief in the heart, are apt to occur, are (at least so far as I have seen and read) weakly, hard-worked, badly-fed lads at about the age of puberty. So far the similarity to rheumatism is close, for boys of this class are not unfrequently the subjects of a first rheumatic attack. The disease sets in, too, like rheumatism, with pains in the limbs and joints, and, like it, is soon followed by cardiac or pericardial complication. A close examination, however, will almost invariably detect a manifest peculiarity even in those symptoms which seem to be rheumatic, as well as certain distinctive characters which are not met with in ordinary rheumatism. Thus, in the form of disease in question, the pain at first complained of in the limbs is usually fixed to one part, instead of being somewhat general, and shifting its seat from one joint to another, as is usually the case with rheumatic pains. The pain, too, is often referred to the bones and fleshy part of the limbs, rather than to the joints, as in rheumatism. There is generally wanting, too, the swelling and characteristic streaky redness so often found about rheumatic joints, the swelling when present being usually slight, and rarely attended by any redness. The febrile symptoms also set in with more severity than in rheumatism, their onset being usually indicated by a distinct rigor, after two or three days' suffering with pain in one or more limbs.

"There is also greater disturbance both of the nervous and vascular systems than occurs in rheumatism; the former denoted by excitement, mental distress, and agitation, succeeded by delirium, and usually terminating in stupor or coma; the latter denoted by an unusually rapid action of the heart, the pulse generally ranging from 120 to 140. Moreover, the peculiar odour characteristic of rheumatism is absent; and, what is a most important, and, I believe, constant symptom, an eruption of small pustules, quite different from the miliary vesicles in rheumatism, sometimes few in number, sometimes rather abundant, appears over the limbs, face, and trunk, in a few days after the commencement of the febrile symptoms.

"Lastly, the disease runs a far more rapid, as well as a more deadly course than rheumatism, death usually ensuing, with typhoid symptoms, in from six to ten days from the beginning of the attack.

"It will be observed, from this brief *r  sum  * of the main symptoms, that they are those of a rapidly-poisoned state of the blood, such as are often exhibited in acute phlebitis or py  mia, after surgical operations, rather than those of ordinary articular rheumatism. Injury to a joint or bone is inflicted by a blow, which may or may not be remembered; or a joint may inflame from exposure to wet or cold; or, again, from mere atmospheric causes, or in consequence of a trivial wound which has suppurated or been poisoned, inflammation of, or absorption of matter into, one or more veins, may have occurred; in one or other of such ways the venous blood may be

contaminated by some local mischief, which may have existed for two or three days, with little more than local pain. Then deposits take place in the lungs, and often contaminate the arterial blood, from which, again, tertiary deposits ensue in various parts of the body, including the muscular tissue of the heart, and, by their presence in this latter locality, fatal pericarditis may be induced."

ART. 62.—*On "Le Bruit de Moulin."*

By M. MOREL-LEVALLÉE.

(*Gaz. Hebdomadaire de Méd. et Chir.*, June 5, 1863.)

In a note read at the Parisian Academy of Medicine in June last, M. Morel-Levallée describes a sign, which he calls *bruit de moulin*, as pathognomonic of hydropneumothorax. This sound is not unlike the sound of a water-wheel, and it depends upon the same cause, the agitation of air with water. Its maximum of intensity is in the cardiac region, but it is heard at a considerable distance. In two cases which are given, there was effusion into the pleura (in one case effusion of blood), together with air, the cause in both being a serious crushing of the chest. M. Morel-Levallée explains the sound in question by supposing that it is produced by the heart, the movements of this organ beating together the air and fluid in the pleura, just as the same movements give rise to a friction sound in the case of an inflamed pleura.

ART. 63.—*On "Graves' Disease."*

By Dr. J. WARBURTON BEGBIE, Physician to the Royal Infirmary, Edinburgh.

(*Edinburgh Medical Journal*, September, 1863.)

In a paper read before the Medico-Chirurgical Society of Edinburgh, in July last, the view maintained by Dr. Begbie is, that the true pathology of the bronchocele and exophthalmos found in connexion with cardiac palpitation and vascular pulsations and dilatations, lies both in the blood and in the nervous system, but that the "primum mobile" is the former;—that an altered state of the blood—for a time stopping short of what is generally known as anaemia,—but in many cases amounting to well-marked anaemia, acts directly on the nerves of bloodvessels, and on the nerves of the heart—"Sanguis moderator nervorum";—that, as a consequence, their rhythmical movements are seriously affected, and dilatation of the heart's chambers, and of bloodvessels, arteries, but chiefly veins, results;—that for a lengthened period the bronchocele is truly a vascular enlargement and dilatation; but that in course of time, hypertrophy and degeneration of gland-structure result;—that the exophthalmos, which is not a necessary consequence any more than the bronchocele of the disordered state of blood, and neurosis of bloodvessels, depends upon congestion and vascular dilatation of the

ophthalmic vessels, with effusion of serum into the post-ocular cellular tissue ;—and, lastly, that a plan of treatment directed to the improvement of the condition of the blood, and, at the same time, to the state of the nervous system,—is successful in effecting a cure, provided those organic changes in the heart to which reference has been made have not already been induced.

ART. 64.—*On “Graves’ Disease.”*

By Dr. LAYCOCK, Physician to the Royal Infirmary at Edinburgh, &c.

(*Edinburgh Medical Journal*, February, 1863.)

Dr. Laycock looks upon this affection as resulting from disorder of the nervous system, and not from anaemia. His general conclusions are :—“ 1. That the exophthalmos under consideration is specially due to disorder of the nervous system. 2. That it varies in character and diagnostic significance accordingly as it is associated or not with other phenomena involving the vascular system of the heart, and of the eyes, head, and neck—the carotideal as distinct from the vertebral system of capillaries. 3. That it is sometimes of spinal, sometimes of cranial origin; and that in either case its nature and seat may be diagnosed. 4. That it occurs under a variety of morbid conditions of the nervous system.

“ If it might be permitted to theorize on the causes of symptomatic exophthalmos from these data, we might conclude that, when it occurs in strangulation, it is probably due to mechanical injury to the cervical sympathetic by the tightened cord or other violent means used; in the emotional form the condition is probably like that when the sympathetic is galvanized, the face being pale, and the eye staring; in certain morbid cerebral conditions, such as mania, with epilepsy and general paralysis, the lesion is probably in the first instance paralysis of the sympathetic, and subsequently of the fifth and seventh; and, finally, that in the class of cases under consideration, when the exophthalmos is symmetrical, it is spinal; the cervical and upper dorsal region being the seat, together with the corresponding cervical and dorsal divisions of the sympathetic; but when unsymmetrical, it is due to disease of the trigeminal ganglion and branches of the fifth pair.”

ART. 65.—*On “Graves’ Disease.”*

By Dr. WILLIAM MOORE, Physician to Mercer’s Hospital, Dublin.

(*Dublin Medical Press*, May 20, 1863.)

In a clinical lecture in which two or three cases are cited, and the views of various authors are fairly canvassed, Dr. Moore has these excellent remarks upon the pathology of this very obscure disorder:

“ Now, of all the theories which have been advanced of the

essence of this affection, that of M. Trousseau, that it is a neurosis, more especially of the vaso-motor system, seems to me the most feasible and explicable, and analogous to a great extent with hysteria and nervous irritations to which young females are especially liable, having their origin in the spinal nerves. The experiments of Budge and Waller have gone to show, that those branches of the sympathetic which control the iris, to a great extent do not originate from the main cervical ganglia, but that they have their origin in the spinal cord, passing through the spinal nerves to the sympathetic in the neck ; and further, they proved that in certain animals those branches which influence these motions of the iris were solely connected with that part of the spinal cord which reaches from the sixth cervical to the fourth dorsal vertebrae. Within this space any stimulus applied produced dilatation of the pupil, and to this portion of the cord they gave the term "*regio cilio spinalis.*"

" That the motor fibrils of the heart are derived from the spinal cord, as well as from the sympathetic, is now universally admitted, recent experiments having confirmed these views, and endorsed the belief that the heart is intimately related with a special motor region of the spinal cord which corresponds with this '*cilio spinal region.*' And further, Professor Moleschott of Zurich believes the sympathetic has the same influence upon the heart as the vagus, and concludes from his experiments that the heart is animated by four very excitable nerves, which may easily be over-excited ; these four nerves, two vagi and two sympathetic, have a peculiar consensus, which is no doubt due to the action of the ganglia of the heart, so that the state of irritation or over-excitement which is produced in one of the nerves is transmitted to the other three.

" Again, the branches of the sympathetic to the thyroid body are derived from the middle cervical ganglion. These branches ramify around the inferior thyroid artery, and end in the thyroid body, joining the external laryngeal and recurrent laryngeal nerves.

" Such being the nervous distribution, any irritation communicated along this important tract would readily account for the palpitation, pulsating carotids, and thyroid body, dilated pupils, exophthalmia, heat of head, tinnitus, and other painful neuralgic seizures so frequently associated with this affection. Again, the reaction of this *superior* vascular excitement in these cases will account for the uterine derangement so frequently met with. This *superior regional* vaso-motor excitation, so to speak, depriving the pelvic viscera and the lower extremities of their due supply of blood.

" Hence we meet with irregularities and deficiencies of the menses, usually in direct ratio to the progression of the other symptoms, at least, such is my experience ; but there seems to be an occasional exception to this rule, Withusen having met with one case in which menstruation, in other respects normal, was checked, for two summers. On the first occasion, it was absent for five months without any apparent change in the patient's state ; while, on the last occasion, the visible improvement in the case coincided precisely with the arrest of that function. In all the cases I have seen in females, the amendment in the general symptoms was

consequent on a restoration of the menstrual function to as nearly a healthy standard as possible; and as regards the effects of pregnancy in these cases, Case 3 would go to show, that the more formidable symptoms are at least kept in abeyance by it."

ART. 66.—*Circumscribed Aneurism of the Walls of the Left Ventricle.*

By Dr. WALES, Surgeon U.S. Navy.

(*American Quarterly Journal of Medical Science*, July, 1863.)

The patient in this case, Joseph Brown by name, an ordinary seaman, was admitted into the Hospital at Portsmouth, Va., comatose and well-nigh moribund, 24th December, 1863. The post-mortem examination was made 14 hours after death, and the state of the heart, the only point of special interest was found to be as follows:—

"While *in situ*, this organ appeared of enormous size, and, grasped in the hand, conveyed the impression of its being double. Slitting up the pericardium gave issue to about two ounces yellowish serum, and displayed the heart with its cordiform aneurism in such a striking manner, that the exclamation of some of the bystanders was, 'The man has two hearts.' The coagula were removed from both, and the organ weighed 18 ouncees avoird. Adipose tissue covered in the external surface of both ventricles, except at their apices, the muscular fibres beneath presenting a pale waxy appearance, while those of the auricles were of a healthy reddish colour, and distinctly aggregated in strong bands. The pericardium adhered to the apical segment of the aneurism.

"In the right ventricle yellowish filaments of fibrin entwined with the fleshy columns and the cords, and connected themselves with a large mass of the same material adherent to the columnæ carneæ. Loosely in its cavity were the almost black, post-mortem coagula. The tricuspid and pulmonary semilunar valves were perfectly healthy, and accurately shut their respective orifices. Cadaveric coagula were also found in the right and left auricles, but none of the yellowish deposit. The peculiar semi-organized yellow clots were found in the left ventricle, also adherent to the columnæ carneæ.

"When the cavities of the heart were cleared of all these deposits, an incision was made from the left ventricle into the aneurism, exposing its cavity freely, and giving a good view of its mouth and the hypertrophied columnæ carneæ, which subtended it, dividing the area into an upper smaller segment, and a lower larger one.

"The soft black cadaveric coagula were first turned out from its centre, then less dark granular matter, and lastly layer after layer of reddish-yellow, pinkish, or flesh-coloured fibrin was peeled out, like the laminæ of an onion can be separated after the removal of a section of it. It was distinctly organized; and close to the outer rind I observed tender capillaries shooting into it. Outside of all this was a hard calcareous case, forming a complete wall for the

aneurism, except at its orifice and apex, where there were two round holes, the former 18 lines and the latter nearly an inch in diameter in the shell; there was also a bulging of the extreme point somewhat beyond the lower opening, making in this manner a small secondary cavity. This lining had the thickness of two lines nearly everywhere over its surface, and was perforated at numerous parts by small holes. In its physical appearance, it resembled closely thin plates of the dense cortical substance of the thigh bone; my microscope not being accessible, I am unable to give its minute structure. Outside of this was met the muscular structure of the heart, rather what was left, which only amounted to a thin layer of fibres, placed between the calcareous envelope and the pericardium, diminishing in thickness to the dilated apex that I have previously mentioned, where it ceased, the thickened pericardium forming with the fibrous clots the only boundary of the aneurism in this direction and corresponding to the lower opening of the inside crust. The thickness of these two layers permitted the rays of light to pass through them in such quantities, when the heart was held between the eye and the sun, as to constitute translucency. As I have said above, the heart was perfectly symmetrical, and if the aneurismal tumour had been cut from it, through its somewhat narrow neck, the organ would have been, pathologically, only concentrically hypertrophied and affected with fatty degeneration. The mitral and aortic semilunar valves, like their fellows on the opposite side, were in a normal condition, and performed their offices healthily. I took the following measurements of the left ventricle walls:—

At the base	9 lines
middle	8 "
apex	5 "

Right Ventricle. At origin of pulmonary artery	2 "
lower down	3 "
ventricular septum between 7 and 8	" everywhere.

" Immediately under two of the aortic semilunar valves, and corresponding to that part of the left wall of the right ventricle against which the inner segment of the tricuspid valves lay, when open, the partition was diaphanous, and resembled exactly in structure and thickness the membranous diaphragm of the foramen ovale of the auricles.

Capacity of left ventricle	3j.
" " right ventricle	little less.
" " right auricle little over	fʒj.
" " left auricle little under	fʒj.

" The aneurismal pouch cleared out, as I have said, held exactly 4 ounces of alcohol.

" In regard to the walls of this cavity, I have already stated that at the point of it, the pericardium alone formed its wall. From this place the muscular tissue increased in thickness towards the base of the tumour, where it had attained six lines close to the margin of the ventricular orifice, which was surrounded by a strong fibro-cartilaginous ring seated about the middle of the left cardiac margin (*margo*

obtusus) and a section of it presented a triangular shape with its base outwards, and the two angles continuous either way with the parieties of the ventricle on the one hand, and that of the sac on the other, its apex bounding the orifice with a rounded margin. Between the first two angles there was a distance of 21 lines, and between the last and a point midway the base of the fibrous circlet 18 lines. From this orifice the walls of sac spread out behind to the ventricular fissures, and anteriorly midway between the anterior fissure and left border upwards to the base of the left auricle and inferior vena cava, the apex projecting an inch and a half below that of the heart. From the situation of the communicating orifice its upper half must have been covered by the mitral valves, when they flapped back in the ventricular diastole."

ART. 67.—*Case of Embolus of the Pulmonary Artery.*

By Dr. VANDERPOOL, of Albany, U.S.

(*American Medical Times*; and *Dublin Medical Press*, Sept. 30, 1863.)

CASE.—I was called to attend Mrs. O—, on the 9th of April. She was about sixty years of age, and, while not corpulent, adipose tissue was full and well distributed. There were no constitutional symptoms or marked general disturbance, but she complained of slight neuralgic pains alternating in different parts of the body; also, on attempting to rise, a sensation of great languor, and a feeling of lightness in the head. I noticed, while there was marked fairness and whiteness of the skin, there was no anaemia. I supposed it a case where nutrition was perverted; and though not decided fatty degeneration, still the molecular changes approximated that condition. Absolute rest was enjoined. She was directed to be raised only when necessary, and with care. A sustaining treatment, combined as necessary with morphine, was adopted. Improvement was gradual but marked. At my morning visit some three weeks since she complained of an unpleasant feeling in the left arm, as also, that for an hour past it had been cold; she was obliged to keep it covered, and near a bottle of warm water.

On examination, I found, while sensation was perfect, and motion no way impaired, save a feebleness in the limb, the circulation had so far ceased that no pulsation was perceptible in any part. This feeble vitality remained for over two hours, when the obstruction gave way suddenly, and circulation in all respects was as in the opposite limb. During the period of the obstruction, I listened several times to determine whether any growths near the valves would, by floating off, cause the condition. Nothing abnormal could be detected.

Her general health improved so far that she rose easily from the bed, walked to the adjoining room, and sat up for some time. It was after a comfortable night, and, as she expressed it, "a more natural feeling than she had yet had," that she was seized with dyspnoea and prostration while walking into the adjacent room. I saw her very soon after: she was breathing very labouredly and rapidly; a dusky pallor was upon the surface; the heart was acting tumultuously, yet the capillary circulation was imperfect, and the extremities cold. Dr. Hun visited her in consultation during the afternoon, and suggested that the embolus was probably in the pulmonary artery. She lived about nineteen hours from the time of seizure.

Post-mortem twelve hours after death.—The contents of the thoracic cavity (which was the only part examined) were removed entire. Upon opening the right ventricle of the heart a round, firm, fibrous band, about four lines in diameter, and some three inches in length, was found extending from the fleshy columns of the ventricle to the semilunar valves, and terminated in a bulb of black, coagulated blood, just within the pulmonary artery. Upon carefully dividing the branch of the pulmonary artery leading to the left lung, a fibrous deposit of quite firm consistence, about one inch in length, and of the diameter of the artery, was found just at the first branching of the artery within the lung, completely plugging the artery, and sending prolongations into the branches of the second size. The same condition was found upon dividing up the trunk leading to the right lung, save that the deposit on the left arterial trunk was *firmer* than the right.

The left ventricle contained a small amount of black coagulated blood; the right was *empty*. The muscular tissue of the heart was easily torn, and its outer surface covered with rather more than the usual layer of fat. The arteries showed no atheromatous deposit; the lungs were healthy, and, though not exsanguined, contained a less amount of blood than is usually found in the capillaries of the lung after death.

The microscopic appearance of the plug showed fibrillated fibrin, dense in structure, the meshes filled with haematin; some portions were evidently of more recent formation than others.

ART. 68.—*On Dilatation of the Lacteals.*

By Dr. T. GRAINGER STEWART, Pathologist to the Royal Infirmary, Edinburgh, &c.

(*Edinburgh Medical Journal*, November, 1863.)

The peculiar lesion described in this paper is one of such rarity that it is not mentioned in any English work on morbid anatomy, though it was referred to by Rokitansky in his last edition. Dr. Stewart first describes the case in which it occurred, and then explains his view of its nature.

CASE.—S. M., a man æt. 60, was examined August 28, 1863. The body was very œdematosus, the heart was hypertrophied and fatty, the aortic valves much diseased, and covered with vegetations. The auriculo-ventricular orifices were dilated, and the valves diseased.

The coronary arteries were tortuous and atheromatous. The aorta contained some calcareous plates and patches of atheroma.

The pleurae were adherent—the adhesions very œdematosus. The lungs were emphysematous in front, œdematosus posteriorly, and contained some patches of pulmonary apoplexy. The liver was much congested, and somewhat cirrhotic—the hepatic venous radicals were dilated:—it weighed 52 oz. The capsule of the spleen was thickened. The right kidney was natural, excepting an old cicatrix. The left contained several cysts, none of large size. The two organs weighed 16 oz. The stomach was dilated. The muscular layer was hypertrophied in the neighbourhood of the pylorus. The mucous membrane was extremely congested, and in some parts ecchymosed. Towards the cardiac end there were patches of a yellowish colour, perhaps results of old extravasation. The intestine throughout its whole extent was congested. In many parts the small veins formed little prominences above the surface. There was a polypus in the ascending colon. Scattered throughout the whole small intestine was a number of whitish-yellow

patches, varying in size from that of a pin-head to that of a small bean. Some were granular on the surface, and evidently connected with the mucous membrane; others were smooth, rounded, and lobulated like little fatty tumours, and evidently lay in the submucous layer, for by a little careful dissection they could be separated from the mucous membrane on the one side, and from the muscular layer on the other; a third set, again, much less frequent, consisted of a combination of the other two. On microscopic examination, those of the first kind were found to be made up of groups of villi greatly distended, as in the process of digestion—they were dark and opaque. On tearing them, a milk-like fluid escaped, which presented microscopically the characters of milk or chyle. The villus then collapsed, and there was no appearance of the bloodvessels having been distended; and indeed it was obvious that the whole enlargements depended upon the presence of the milk-like fluid. As this is the matter naturally present in the lacteals during digestion, and as these take origin in the villi, we seem to be warranted in concluding that this class of patches results from the retention of chyle in the blind extremities of the lacteal vessels of a number of adjacent villi. The whitish-yellow colour arose from the chyle shining through the coats of the villi, and the granular appearance of the surface from the patch being composed of numerous villi. Those of the second kind resembled small fatty tumours, and were situated between the mucous and muscular coats. Some consisted of a single lobule, others of several. On pricking any of them, a milk-like fluid, closely corresponding to that above described, but containing in addition cell-like aggregations of fatty granules, flowed out, and the walls of the particular lobule collapsed. I could not satisfy myself as to the structures of the bounding walls; but some of the patches presented peculiar elongations from the main mass, like tails proceeding from the body, which evidently consisted of some tubular structure. But these did not pass into bloodvessels, nor did they seem to bear any special relation to them, and were therefore to be regarded as portions of lacteal vessels. On the whole, from the character of the contained fluid, the structure and appearances, and the observations previously made, we may conclude that these patches consisted of dilatation of the small lacteal vessels.

Commenting upon the case, Dr. Stewart says:—"Only one theory as to the origin of this lesion occurs to me—namely, that the extreme backward pressure upon the blood, which arose from the disease of the heart and lungs and the general dropsy, acted upon the lymphatic vessels also in some unexplained way, and led to their distension at some points. This view is in accordance with all the facts observed, the chief of which were recapitulated in the account of the examination of the body. I regret that I neglected to ascertain the condition of the thoracic duct, the large lacteal vessels, and the mesenteric glands. It arose from my not having noticed the patches till the intestines were removed, nor suspected their nature until it was too late to investigate the other points."

Dr. Stewart gives an abstract of a case closely corresponding to his own case, which is recorded in Rokitansky's *Morbid Anatomy*, and he refers to several cases of an analogous lesion, namely dilatation of the lymphatics.

ART. 69.—*On the Double Pulse and Double Heart-Sounds.*

By Professor SKODA.

(Allg. Wien. Med. Zeit. viii. 1863; and Med.-Chir. Review, July, 1863.)

The author observes that the reduplication of the pulse is not a phenomenon indicative of much danger. It is not connected with the heart's movements, but is for the most part a local manifestation, most likely arising from a change in the fixed position of the artery.

Reduplication of the heart's sounds is most readily explained on the supposition that the elements of the sound (*ton*) on both sides of the heart are not contemporaneous, as they ought to be, the aortic sound being produced at the end of the ventricular sound, so that between both of these a short period is perceptible, the sound being, as it were, split up (never properly redoubled); or if the sounds are doubled, the two ventricles do not contract at the same time, or the right one contracts twice while the left only contracts once.

The reduplication of the second sound is ordinarily produced by the reflux in the aorta and pulmonary artery not being contemporaneous; and in most cases this is the result of an augmentation in the tension of the pulmonary artery, by which a division or splitting of the second sound is occasioned. Such a splitting also appears to be possible in a single artery (aorta or pulmonary artery), owing to an unequal elevation of the valve flaps. A reduplication of the second sound may be produced by the second sound in the ventricle and heart in the arteries not being contemporaneous; the second sound, for example, being produced first in the pulmonary artery, and then in the ventricle. Another form of reduplication of the second sound may be produced by the heart's movements when exudation really exists in the pericardium, as in the beginning of pericarditis.

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 70.—*Cases of Throat Dysæsthesia, with Clinical Remarks.*

By Dr. HANDFIELD JONES, Physician to St. Mary's Hospital, &c.

(Medical Times and Gazette, May 2, 1863.)

"The following cases," says Dr. Handfield Jones, "are examples of an affection which, as far as I know, is not noticed in standard works, and though not a life-perilling disorder, is one which causes no little distress, and for the cure of which patients are very grateful. I confess to a predilection for the study of these minor and more manageable diseases rather than for those grave affections where there is room for diagnosis,—and little more. It seems a poor thing to know all about a disease except the most desirable knowledge, viz., how to cure it. It is very possible to confound these afflictions with the so-called hysterical, from which, however, I consider that

they are positively differentiated by the results of treatment. The term hysteria or hysterical should be applied, I think, to no case where there is really an honest desire on the part of the patient to get well, and where there is no morbid tendency to exaggerate the sufferings. A genuine specimen of hysteria will lead the unfortunate doctor a pretty dance of attendance on one symptom after another, and will be infinitely more benefited by moral discipline than by all the drugs that were ever invented. The patient is sick because she wills to be so, and sick she will be as long as it suits her, and no longer. There are doubtless examples common enough of a mixed kind, where, along with some real bodily disorder, there is more or less hysterical mental perversion. But there can be no question that the cases recorded below were not of this kind. Plainly and clearly the patients got well on a drug treatment that would have done small good to an hyster.

"As to the nature of the disorder, it seems plain that it was a pure neuralgic affection, as evidenced by the absence of visible disease, the remissions, the general state, and the juvantia. Now, the great rule to bear in mind in dealing with all neuralgia, which does not depend on some actual cause of irritation (as a decayed tooth), or on gouty or syphilitic poison, or the like, is, that in 99 cases out of 100 it is either rheumatic or simple. The former it probably is if the urine is thick with lithates, the strength pretty good, and the patient has suffered previously from rheumatism; the latter if the urine is pale, clear, of low sp. gr., if the patient is feeble, and gives no history of rheumatism. However, it is very common, as these cases exemplify, that the two affections run into each other in the same patient, and that the dysæsthesia at its outset is rheumatic, and afterwards becomes simple. In the rheumatic condition iodide of potassium and hydrochlorate of ammonia are the two remedies, the latter if muscular tissue seems to be specially involved. Alkalies should be given with the iodide as long as lithates are deposited. In the simple neuralgia, quinine, iron, and opium may be relied on, with rest, good diet, and pure air. It is often in doubtful cases good practice to begin with the treatment directed against rheumatism, replacing it if it fails, or proves inadequate to effect a complete cure, by the direct tonics. Not only in throat dysæsthesia, but in a multitude of disorders, like in nature, only varying in situation, the above plain directions will lead to satisfactory results.

"Dr. Türek (*Wien. Allg. Med. Zeitung*, vii., 9, 1862) has described an affection which seems to be similar to, if not identical with, the one I am considering. He calls it neuralgia and hyperæsthesia of the entrance of the throat, and describes particularly its exact seat. His therapy consists in resection of a piece of the gustatory nerve, and application of lunar caustic. This, he says, has been successful; but in my cases I am sure that the branches of the glosso-pharyngeal and sympathetic were much more involved than the gustatory nerve. In lingual neuralgia, on the other hand, which is a far more obstinate affection, division of the gustatory might, I think, be advisable."

CASE 1.—Simple Throat Neuralgia—Benefit from Iron and Quinine.—Jane B., aged 35, admitted Oct. 1st. Had suffered a year with her throat. There was no soreness in swallowing, nor any evidence of inflammation, but it was the seat of distressing constant aching pain, which came on first after a tooth had been removed. The pain was not constant; would come and go; and was increased by fatigue and causes of depression. She was exceedingly nervous, but showed no fussiness or hyperæsthesia, and seemed to have a calm, well-ordered mind. She was of large, rather lax make. She lived not far from a canal. She had occasionally not full power over her jaws. Often lost her voice, and said her throat felt weak. She had had the tonsils amputated without any benefit. Nov. 16th.—Has taken citrate of iron and quinine with benefit. The throat has been much relieved, but becomes again raw and tender when she takes any flesh cold.

CASE 2.—Throat Dysæsthesia—Laryngeal and Pharyngeal Constrictive Spasms—Cure by Iodide of Potassium, Iron, and Quinine.—M. B., aged 67, admitted Dec. 14th, 1857. She had been ill six months. She complained of feeling as if she should be choked; the phlegm "kept rising." At times she had dysphagia, and was always hawking. She had not much cough. She referred her pain to the region of the os hyoides. There was nothing morbid to be felt externally, and internally the top of the epiglottis could be reached with the finger; it seemed normal; there was nothing wrong to be found in the throat. She had a sallow aspect. Tongue clean. Appetite very good. Bowels regular. Often suffered from frontal headache, which "took her sight away." An œsophagus bougie passed readily without pain. Had nausea and retching of a morning. Rx Potassii iodidi, gr. iij.; sodæ carb., gr. v.; infus. gent. co., ʒj. ter die. Rx Pil. hydr., gr. ss.; ext. rhei, gr. ij. in pil. omni nocte. A blister to the front of the throat. 21st.—Much better; she can swallow better, and has not the heat and burning round the throat and mouth which she had. Rx Potassii iodidi, gr. v.; tinct. cinchon., ʒj.; infus. gent. co., ʒj. ter die. 31st.—Has been much better, but is now for the last two days suffering in the same way. She complained of irritation about the throat, referred to the thyroid cartilage, with a sense of dryness. Bowels open; urine normal. She now took for a week small doses of carbonate and sulphate of magnesia, with vinum colchici and tincture of opium, but with little or no advantage. The dysæsthesia was absent occasionally. She was now ordered, on January 7: Rx Ferri et quinæ citratis, gr. v.; potassii iodidi, gr. j.; tinct. nucis vomicæ, ℥x.; aquæ, ʒj., ter die; pil. hydr. coloc., gr. v. alt. noct. 14th.—Throat and mouth much easier, though dry at times. 28th.—Has now scarce any of the old affection. She was now to take the iron and quinine without the iodide of potassium. On Feb. 11th she was discharged well.

CASE 3.—Laryngeal and Pharyngeal Spasm cured by Hydrochlorate of Ammonia and Bark.—Hannah C., aged 20, was admitted October 18. She had been ill one week. She stated that she had been taken in the night with choking sensations in her throat; "her breath seemed to be leaving her." At the same time she had palpitation, lasting a quarter of an hour. Her tongue was much coated, and her appetite was bad. Bowels open. Some menorrhagia. Pil. hydr. coloc., gr. v., alt. nocte. Rx Spt. ammon. foetid., ʒj.; infus. valerian. ʒv., ter die. 29th.—Food seems "to stick in her throat" as before. Rx Ammon. muriat., ʒj.: mist. camph., ʒj., ter die; (pil. rhei co., gr. v., p. r. n.). Nov. 5th.—Throat much better. Rx Tinct. cinchonæ, ʒss.; infus. gent. co., ʒj., ter die. 12th.—Much better. 19th.—Better. Discharged.

CASE 4.—Cranial Rheumatism, Throat Dysæsthesia, Laryngeal Spasm cured by Iodide of Potassium and Iron.—Charlotte H., aged 37, admitted

September 13. She had been ill eighteen months with great pain in the top and sides of the head, with feelings of fright, and a tendency at night to jump out of the window, and to scream. She was rather feverish at night. Urine very clear. Bowels always relaxed. Loss of appetite. Pulse of fair force. Skin warm. She had lost four children : they all died in the birth. No eruption was observed on them. She was ordered at first *mistura ammoniae acetatis*, $\frac{5}{j}$.^j, 4tis hōris, and an alum gargle. On the 18th this was changed—*R. Potassii iodidi*, gr. v.; *infus. gentianæ co.*, $\frac{5}{j}$.^j, ter die; and *pil. saponis co.*, gr. v., omni nocte. Oct. 9th.—She reported that her head was very much better, but she had choking sensations in her throat, so that at times she had to fight for her breath. This was mostly at night when she awoke. She felt as if she had something to bring up from the throat, which was a little inflamed. Urine very clear. Pulse steady. Pt. c. mist., ter die. *R. Ferri carb. saccharati*, $\frac{3}{j}$.^j; ft. pulv. ter die. 30th.—Throat quite well. Head a little queer at times. Pil. c. mist. et pulv. At the next visit, Nov. 6th, she was well.

CASE 5.—*Throat Dysesthesia—Debility—Cure by Iodide of Potassium, Iron, and Quinine.*—Eliza W., aged 36, admitted October 23. She had been ill one month. She has a dreadful “worried feeling” in her throat, which she said prevented her sleeping, and affected her eyesight ; when the feeling was bad it made her “violent,” and caused her to scream. She could take no tea, coffee, or beer. Tea “made her throat bad directly.” Pulse of fair force. *R. Potassii iodidi*, gr. iv.; *ammoniae sesquicarb.*, gr. iv.; *infus. gentianæ co.*, $\frac{5}{j}$.^j, ter die. *R. Ferri carb. saccharati*, $\frac{3}{j}$.^j; ft. pulv. ter die. Nov. 3rd.—Was much better ; sleeps well at night. 10th.—Going on well. Rep. pulv. *R. Quinæ disulph.*, gr. iiiij.; *tinct. zingib.*, $\frac{m}{x}$.^x; *aquaæ* $\frac{5}{j}$.^j, ter die. Dec. 8th.—The “worried” feeling in her throat is entirely gone ; she was able to sleep at night ; speech was affected at times if she took tea or coffee. 29th.—She has had a severe shock from the death of her youngest child four days ago ; had not been able to sleep since. *R. Ferri et quinæ citratis*, gr. x.; *tinct. nucis vomicæ*, $\frac{m}{x}$.^x; *aquaæ*, $\frac{5}{j}$.^j, ter die. Under this treatment she continued to hold her ground fairly well up to the present time, January 29, in spite of nursing a sick child.

ART. 71.—*On the Use of Ipecacuanha in the Treatment of Tropical Dysentery.*

By Dr. J. EWART.

(*Indian Annals of Medical Science*, January, 1863.)

The paper from which the following remarks are taken forms part of an elaborate review of the treatment of tropical diseases. Commencing with a copious warm-water enema, ipecacuanha, Dr. Ewart thinks, is the main remedy. He says :—

“ After the operation of the enema, or immediately the patient presents himself suffering from any of the dysenteric conditions already mentioned, in those cases where no preliminary aperient is indicated, a turpentine epithem or mustard plaster should be applied to the epigastrum, and from half a drachm to a drachm of the ipecacuanha powder, suspended in two drachms of syrup of orange-peel with four drachms of water, or in half an ounce of infusion of chamomile with ten grains of carbonate of soda, or five grains of the trisnitrate of bismuth, should be simultaneously administered. Every

minute gained in introducing the medicine into the stomach is an advantage appreciated by every one who has largely used it in dysentery. To wait 20 minutes, until the counter-irritation is established, is simply to give the disease so much advance as to time, and proportionately to diminish the chances of success. Moreover, when the counter-irritant and ipecacuanha are both brought into action at the same time, the former almost invariably takes effect and produces all the counter-irritation it is capable of, before the latter begins to cause the slightest feeling of nausea.

" After the patient has swallowed the ipecacuanha, he should occupy the recumbent posture, with the head lying at a lower level than is customary. He should be directed to refrain from drinking liquids for an hour or two. If, however, the desire to quench thirst prove irresistible, small pieces of ice may be sucked or swallowed, or, in localities where this luxury is not procurable, cold water, in teaspoonsful, given at intervals, may be allowed. Vomiting should be resisted to the utmost. Nausea will probably occur; perhaps, in some cases, retching and vomiting. But, as the vomiting is exceptional, and, when it does occur, seldom happens before the lapse of an hour from the administration of the large dose; and as no tepid water has been swallowed, so as to provoke and promote emesis, the vomited matter generally consists of small quantities of gastric and mucous secretion with or without a trace of the ipecacuanha. Hence the rule is that, when vomiting does happen, only an insignificant portion of the dose is actually rejected. If, however, the practitioner or nurse, after examination of the ejected matters, has reason to believe that the whole or the greater part of the drug has been expelled, there should be no hesitation in repeating the dose, as soon as the stomach appears to be in a proper state for its reception.

" Provided a full dose of the medicine has been retained, it is advisable to wait eight or ten hours before repeating the ipecacuanha,—when ten, twenty, or thirty grains—usually a scruple—should be exhibited every four, six, or eight hours, according to the urgency of the case, or the manner in which the stomach tolerates its presence,—until the tormina, tenesmus, sleeplessness, mucous, slimy, bloody stools and functional derangement of the whole digestive system are succeeded by relief from pain, refreshing sleep, feculent, or what are termed bilious evacuations, and a speedy restoration of the primary processes of assimilation. It will be found beneficial to time the large doses, so as to allow of 30 grains being given at bedtime, and a scruple in the morning, so long as their use is deemed necessary.

" If no disorganization of the intestinal mucous membrane has taken place, the above changes frequently happen after the first or second large dose of ipecacuanha; and even if ulceration has set in, they are generally discerned on the second or third day after it has been commenced. In either case, it is necessary to discontinue the medicine, when the disappearance of tormina, tenesmus, the absence of mucus, blood and slime from the stools indicate that the cessation of the dysenteric process has been effected, and that the affected portions of bowel have been placed in the most favourable con-

dition to undergo cure by 'resolution,' if the morbid action has not advanced to the stage of ulceration, or by the necessary processes of 'granulation and cicatrization,' if sloughing or ulcerative destruction of the mucous membrane has already taken place.

"In those cases where no ulceration exists, convalescence is speedy and complete in a few days, without any extraordinary care as to diet; though it is well to caution the patient against all irregularities in this respect. When ulcers are to be healed up, ferruginous and bitter tonics, and an easily digestible and nutritious diet may be allowed. If required, the large intestine should be gently washed out by a tepid water enema. The direct application of astringent and stimulating remedies, in the form of enemata, should not be neglected,—particularly when the ulcers are situated in the rectum or sigmoid flexure. Should acute symptoms reappear, the large doses of ipecacuanha must be resumed and persisted in, until the re-excited dysenteric inflammation is checked, and the ulcers are disposed to granulate and cicatrize, when the conservative treatment and nutritious diet may be recommenced without delay.

"Opium by the mouth is not necessary. It may be employed, in appropriate cases, in the form of small enemata or suppositories to alleviate the distress arising from tenesmus. When swallowed, it 'locks up' the secretions of the liver, pancreas, and alimentary mucous membrane, rather favouring than reducing the inflammation in the intestinal mucous membrane.—These bad effects quite counter-balance the benefits derived from the sleep, diminution of peristaltic action, rest to the inflamed gut, and temporary decrease of tormina and tenesmus consequent on narcotism. This explains why the real character of the disease is often completely masked by opium, and why apparent amendment is taking place, whilst the destructive ulceration and sloughing of the mucous membrane is rapidly extending. As ipecacuanha speedily brings about all the good, without any of the evil effects of opium, this narcotic, in any form, with the exceptions adverted to, is not only superfluous, but injurious.

"There is less objection, however, to uniting the ipecacuanha with such remedies as are acknowledged to possess the power of lessening the irritability of the stomach and of increasing its tolerance of the drug, without interfering with the functional activity of those organs whose secretions we are endeavouring to promote, with a view to rectify the disturbed balance of the portal circulation. On the contrary, medicines of this order may, perhaps, be associated with ipecacuanha with benefit—such as carbonate of soda, bismuth and, possibly, chloroform, camphor, and hyoscyamus.

"The above outline of treatment is that which is usually applicable, but the dose and the repetition of the same must be regulated, according to circumstances, in special or exceptional cases. It must, however, be borne in mind that all other remedies that have ever been recommended for the cure of dysentery are of secondary importance compared with ipecacuanha, and that, during the congestive, exudative, and ulcerative stages of the acute form of that disorder, as well as in the acute relapses supervening upon chronic

dysentery, every reasonable effort should be made to induce the stomach to tolerate and pass onwards the doses mentioned.

" When dysentery occurs in pregnant women, large doses of ipecacuanha are not contra-indicated ; because, if the disease be allowed to proceed (which is more likely to happen under the old than the ipecacuanha treatment), abortion or premature labour is almost certain to follow ; and when such a complication supervenes, in the later months of gestation, the mortality almost surpasses that of any other disease. When the dysenteric inflammation is summarily put a stop to by the ipecacuanha, abortion or premature labour is prevented. Under the opiate method of management, premature labour is not averted, but, in the majority of cases, occurs at the acme of the disease, when the sloughs are being thrown off; and the woman succumbs to the conjoint shock to the system. In dysentery complicated with pregnancy, opiate enemata, to relieve irritation in the rectum, are more essential and permissible than under other circumstances.

" In the acute dysentery of children, ipecacuanha is invaluable. For a child of six months, a grain, and for a child of one year two grains, should be given with an equal quantity of carbonate of soda, two or three times a day, until the tormina, tenesmus, slimy and bloody stools are replaced by freedom from pain and feculent evacuations. It will not always be necessary to continue the drug beyond two or three days at a time. But it should be recollect that the disease adheres with greater tenacity to children than adults ; and although we observe that ipecacuanha has an immediately beneficial effect in diminishing the blood, mucus, slime and frequent stools, still we find that dysenteric or slimy motions with undigested food continue to pass. In that case, the ipecacuanha combined with chalk, bismuth, or carbonate of soda should be repeated, once or twice a day, for a certain period, till healthy evacuations are restored. In children, the gums must be lanced when necessary ; turpentine liniment with fomentations, or turpentine stapes alone, may be applied to the abdomen ; weak chicken-broth or arrowroot should be substituted for milk ; and above all, food must be given, in small quantities at a time, and at regularly stated periods. From the age of one year, the dose is regulated by adding one grain for each additional year of age up to eighteen, when the doses already indicated for adults should be employed. In children, a full dose at night, and a smaller one in the morning, will often succeed in effecting a rapid cure.

" In cases where evident malarious taint pervades the system and complicates acute dysentery, disulphate of quinine is indispensably necessary. A scruple of the antiperiodic will be most speedily absorbed, if dissolved in water acidulated with sulphuric acid, and it may precede by an hour the first dose of ipecacuanha. Ten-grain doses should afterwards be given midway between the large doses of ipecacuanha, and, if possible, during abatement of any periodic febrile excitement which may exist, until the feverish symptoms have been subdued. Quinine here is as important as ipecacuanha, for until it has successfully checked the disturbing influence which

malarious poisoning exercises upon the capillaries of the portal and general circulatory systems, the good effects which ipecacuanha produces are only temporary and incomplete. The mildest febrile exacerbations of a miasmatic origin re-excite dysenteric action, and thus undo the good that the ipecacuanha has effected. Hence, the urgent necessity for removing, without delay, every vestige of masked or active malarious fever complicating the dysentery. No medicine enables us to accomplish this object so safely and so quickly as the disulphate of quinine in large doses.

"In purely chronic dysentery, ipecacuanha cannot be expected to do the same amount of good. In acute attacks, however, supervening upon chronic dysentery, it certainly appears to prove beneficial.

ART. 72.—*On the Influence of a Long Course of Nitric Acid in Reducing the Enlargement of the Liver and Spleen which sometimes results from the Syphilitic Cachexy.*

By Dr. BUDD, Physician to King's College Hospital.

The attention of pathologists has for some years been directed to the enlargement of the liver; or simultaneously of the liver and spleen; or of the liver, spleen, and kidneys, of which Dr. Budd many years ago sketched the clinical history, under the heading "Scrofulous Enlargement of the Liver;" but which, in consequence of the discovery since made, that some elements of the enlarged glands commonly exhibit the chemical reaction of starch, has recently been described as the "Amyloid Degeneration."

This disease occurs under various circumstances, but especially in persons whose health has been long impaired by constitutional syphilis or scrofula. The most striking examples of it are seen in the victims of scrofulous or syphilitic caries.

In such cases, after the disease of the bone has existed a considerable time, it is found that, without pain, or tenderness, or other symptom specially directing attention to these organs, the liver and spleen are much enlarged. By-and-bye, the urine becomes albuminous.

Albumen continues to pass off in the urine; the patient, often without much loss of flesh, grows paler and paler; and, at length, death occurs—not from the disease of the liver or spleen, but from that of the kidneys.

After death, it is found that the kidneys are enlarged, as well as the liver and the spleen, and that the three organs have undergone the same kind of morbid change.

The object of this communication is not, however, to describe the course of the disease, or the characters of the morbid change; but to make known that the nitric acid (or the nitro-muriatic acid), long continued, has, in certain circumstances, great remedial power over it. The nitro-muriatic acid has for many years been extensively used for its influence in modifying the nutrition of the liver; and,

in very many instances, under its long-continued use, enlargement of the liver—presumably of the kind in question, occurring under different circumstances—has been found gradually to disappear.

To illustrate this sequence of events, and the kind and degree of influence which, when the disease is of syphilitic origin, the nitric acid exerts, Dr. Budd relates three cases.

CASE 1.—A medical graduate of Edinburgh, of very temperate habits, during his studentship, towards the close of 1841, contracted a venereal sore, followed by enlarged inguinal glands. This malady was treated by local remedies only; and at the end of a month or five weeks his health was re-established. He remained in good health till the autumn of 1853, when he had, for some weeks, ulcerated sore throat.

In March, 1854, he had an attack of pneumonia, for which he took a large quantity of calomel; and before he had recovered from the debility which this illness caused, the throat became ulcerated again; the ulceration commencing in the soft palate, and soon spreading to the uvula and tonsils.

In July, a piece of the vomer came away. Subsequently, from time to time, small pieces of the nasal bones were detached, and, at length, the bridge of the nose sank. To check this ulcerative process, iodide of potassium in very large doses, and a combination of the syrup of iodide of iron with cod-liver oil, were taken, alternately, for some months. The ulceration of the fauces was stopped by these remedies; but the patient was left weak, and a puriform discharge from the nostrils continued.

In the autumn of 1859—when the disease of the nasal and palate bones had existed between five and six years—he suffered considerably from acidity of the stomach, flatulence, and other dyspeptic symptoms, and noticed an unnatural fulness and prominence of the epigastric region.

On account of these ailments, he paid me a visit on December 24th, 1859. He was then pale and much emaciated; weighing only nine stone seven pounds, though five feet eleven inches and a half in height. The skin was dry, and the tongue unnaturally red.

The fulness and prominence of the epigastric region was found to be chiefly owing to enlargement of the liver; the lower edge of which, from the thinness of the abdominal walls, could be distinctly traced, reaching in the median line as low as the umbilicus. The spleen was likewise enlarged, being plainly felt extending about the breadth of three fingers below the false ribs.

The urine was voided more frequently than natural; and, on examination, was found to be of specific gravity 1012, and to contain a considerable quantity of albumen.

The fauces exhibited the scars of former ulcers, which had removed the uvula and much of the soft palate, but no actual ulceration was visible. There was still an abundant puriform discharge from the nostrils.

The case was considered to be one in which disease of the liver, spleen, and kidneys, of the kind specified above, was consequent on protracted caries,* most probably of syphilitic origin; and twenty minimis of dilute nitric acid, with a dessertspoonful of the fluid extract of sarsaparilla, twice a day, and a generous diet, were prescribed. No change of residence or occupation was adopted.

The medicines were taken continuously; and on the 28th of April, 1860

* The condition of the liver is not exactly alike in all cases of this kind. In some cases it contains oil enough to add considerably to its bulk; in others, scarcely any.

—that is, after the lapse of four months—the patient had improved much in condition, and had gained a stone in weight. The liver and spleen were much reduced in size. The urine was of specific gravity 1010; clear, moderately acid, and contained only a very small amount of albumen.

The diet since the preceding December had comprised solid animal food twice a day, at breakfast and dinner; and, in addition, strong soup for lunch, and a pint of Guinness's porter daily, but no other alcoholic drinks.

The patient was directed to continue taking the acid and sarsaparilla; which, with only a fortnight's intermission, he did from this time to October 12th, when I had an opportunity of seeing him again. He was then stouter and stronger than before, and no perceptible enlargement of the liver or spleen existed. The urine was now free from albumen. The specimen examined was of specific gravity 1018, very slightly acid when just passed. There was still a puriform discharge from the nostril, but not one-tenth as much as on my first examination.

On account of the persisting discharge from the nostril, and the absence of any discoverable ill effects from their use, the medicines were continued to the beginning of April, 1861. On May 1st of that year, I examined the patient again. He then considered his health re-established. His weight was eleven stone one pound. The liver and spleen could not be felt beyond their usual limits. The urine was of specific gravity 1010, barely acid when just passed, and, as at the preceding examination, contained not a trace of albumen.

The acid and sarsaparilla were thus taken more than fifteen months, with only a fortnight's intermission; and the result was a gradual and progressive improvement of health.

During this long course of nitric acid, with a highly animal diet, there had been no gravel or red sediments in the urine; and from an early period of the course to its end, there had been no indications of undue acidity of the stomach, although, before the acid was taken, acidity of the stomach and flatulence had been among the symptoms most complained of.

The effect of the plan of treatment appeared to be, a gradual amendment in the disease of the nostril; a gradual diminution of albumen in the urine; return of the liver and spleen to their natural size, and restoration of the general health.

CASE 2.—On June 6th, 1862, I was called to a gentleman, of powerful frame, 35 years of age, who for several years had been grievously afflicted with disease of the bones of the kind in question.

As long ago as the year 1855, several pieces of necrosed bone, from the size of a shilling downwards, belonging to the outer table of the skull, had been removed from the forehead and top of the head. The left knee, in consequence of the long existence of ulcers near it, had been contracted, so that the foot could not be placed to the ground; above the right knee was an ulcer still open, apparently connected with the femur; on the forearm another open ulcer; and the bones of the forearm, and the tibia on each side, were thickened in parts and uneven.

For some months he had been confined to his bed and chair; and, from the shortening of one leg and general muscular debility, he was unable to stand. The liver was much enlarged; the spleen could be felt projecting some inches below the ribs; the urine contained a large amount of albumen.

At this time, some diarrhoea existed, with occasional vomiting. These ailments were soon removed by attention to diet and by pills of creasote and opium; and twenty minimis of dilute nitric acid were then ordered to be taken twice a day. Subsequently, the dose of the acid was increased to

twenty-five minimis twice a day. A generous diet, which had been previously taken, was allowed. No change was made in the mode of life.

Soon after I first saw the patient, he went to his usual country residence; and in the middle of November, I received a report from his medical attendant, stating that he had improved in condition, and that the quantity of albumen in the urine had lessened.

He continued to take the acid; and in February, 1863, I saw him again. I found the liver reduced in size; the spleen scarcely to be felt; and the general condition much improved. The amount of albumen in the urine was less than in the preceding summer; but was still considerable.

As yet no attempt had been made to walk. Soon after this, an apparatus was contrived for the gradual extension of the contracted knee; and, by the aid of crutches, he began to walk about the room. From twenty-five to forty minimis of nitric acid, with eight minimis of tincture of sesquichloride of iron, were taken daily from this time till July 13th, when twenty-five minimis of the acid were directed to be taken regularly twice a day; and acid foot-baths were ordered in addition.

On July 13th, the liver could be felt in the epigastric space, but on the right side did not extend below the false ribs. The spleen could no longer be felt. The sores were all healed. The urine, which was clear, and of natural colour, still, however, contained albumen.

The acid has thus been taken continuously for thirteen months; and, though scarcely any bodily exercise has been possible, the result has been—reduction of the liver and spleen almost to their natural size; diminution in the amount of albumen in the urine; healing of the sores; and improvement in the general health. Notwithstanding the large quantity of acid taken, the urine, when tested, has never been more than moderately acid, and no heartburn nor undue acidity of the stomach has ever been complained of.

CASE 3.—An officer in the army, of robust frame, 35 years of age, had syphilis eleven years ago. This was followed by sore-throat. In less than twelve months from the time of infection, he began to have pains in the bones, worse at night. Subsequently, during the Crimean war, in which he was engaged, nodes formed on the shins and on the right radius. He continued to suffer, more or less, from pains in the bones for several years.

Six years ago, abscesses formed on the right forearm and on both legs—all, apparently, in connexion with the bones; and, ultimately, in the arm, a piece of bone, as large as a shilling, exfoliated. The sore on the arm from which the piece of bone came remained open three or four years; the other sores healed more quickly.

Two years ago, after exfoliation of the piece of bone referred to, all the sores healed. From that time, his health was comparatively good for twelve months. Law proceedings in reference to some property then gave him, for several months, much anxiety. The pains in the bones recurred; his sleep became broken; his appetite impaired; and he began to suffer from thirst.

These various ailments continued, notwithstanding the cessation of the mental disquiet to which he ascribed his relapse; and when I first saw him, on Feb. 12th of the present year, he was pallid and cachectic, and so weak that he could not walk a quarter of a mile without fatigue. His weight, which in health was between thirteen and fourteen stone, was now eleven stone. He complained of pains in the bones, sleepless nights, and profuse morning perspirations. His appetite was much impaired; he suffered from thirst; and had occasional nausea.

During the eleven years that had elapsed since the commencement of

illness, he had taken two or three courses of mercury and great quantities of iodide of potassium. The bones of the forearm and the tibia on each side were thickened in parts, so that their surface was rendered uneven; and the skin above them was scarred by the former sores. The liver was much enlarged, reaching in the median line nearly to the umbilicus, and on the right side below that level. The urine contained albumen which, when coagulated in a test-tube and allowed to subside, rose to one-third of the height of the urine in the tube. Twenty minims of dilute nitric acid twice a day were prescribed.

On March 6th, the acid was directed to be taken three times a day; and ten minims of liquor cinchonæ were added to each dose. From the first, there was a rapid improvement in the patient's condition; the pains in the bones lessened; appetite and sleep returned; the excessive thirst abated.

On June 15th—that is, after the acid had been taken rather more than four months—the patient had gained one stone and four pounds in weight; could walk any reasonable distance without fatigue; and had, indeed, little to complain of. The liver was found to be much reduced in size. The urine was of specific gravity 1016, and only faintly acid. It still contained albumen, but in very much less quantity than at first.

He continued to take the acid; and on July 1st, when I last heard from him, he considered his health so far re-established that he was indisposed to follow the advice I gave him, to decline joining his regiment, which was on foreign service.

Here, the acid has been taken a very much shorter time than in the preceding cases; but the result has been—reduction in the size of the liver; diminution in the quantity of albumen in the urine; and remarkable improvement in the general health.

The cases just related appear to warrant the following conclusions:—

“1. That, when the liver and spleen have become diseased in the manner specified, in sequel to protracted syphilitic disease of the bones, nitric acid, long taken, has a remarkable influence in gradually effecting the removal of the morbid deposit to which these organs owe their increased size, restoring the organs to a more healthy condition, and improving the general health.

“2. That, under such circumstances, there is unusual *tolerance* of the acid, which may be taken continuously for many months without inducing excessive acidity of the urine, or any inconvenience attributable to undue acidity of the stomach.

“The cases further afford a strong presumption that nitric acid, taken earlier, would prevent the disease of the abdominal glands, which, when established, it tends to remedy; and they, perhaps, warrant the inference, that since the virtues of iodide of potassium were discovered, nitric acid has been too much neglected in the treatment of long-standing constitutional syphilis.

“Nothing so quickens our perceptive faculties to discover diseases in their nascent state as knowledge of their causation. The knowledge that the peculiar disease of the liver, spleen, and kidneys, that we have been considering, often results from the syphilitic or serofulvous cachexy, more especially when the bones have been for some time affected, may, in many instances, enable us to anticipate its occurrence, or to detect it before it is far advanced, and, consequently, to adopt preventive measures, if such there be; or, at least,

to apply what remedies we have before irremediable changes of structure have occurred.

"When, as in the cases related above, together with enlargement of the liver, there is albuminous urine, showing that the kidneys have become affected, the acid acts much more rapidly and certainly in reducing the size of the liver than in restoring the healthy action of the kidneys.

"One reason of this is, that the healthy action of the kidney requires a more perfect restoration of healthy structure than is implied by mere diminution of bulk; and that changes of structure, which in the liver we are unable to detect, in the kidney are readily and plainly revealed by the presence of albumen in the urine.

"It is probable, however, that when the acid is absorbed from the stomach, its remedial action is really much greater on the liver than on the kidney; because it is carried to the liver directly in the portal blood, while it can only reach the kidney when it has passed in succession through the capillary system of the liver and the lung, and has become distributed in the general arterial current; and it is, therefore, possible that the acid, if taken in baths, when it would be absorbed by vessels that go directly to the lung, might have a more rapid and more powerful action on the kidney.

"I need hardly remark, that it is only when the disease of the bone,* on which the enlargement of the liver, or of the liver and spleen, is consequent, can be arrested; or when this peculiar change in the liver and spleen arises from other conditions that admit of removal, that such results as were witnessed in the preceding cases can be looked for.

"When the enlargement of the liver and spleen are consequent on disease of bone which is irreparable; or when, otherwise, the conditions which led to this enlargement remain in force, the malady, though even then its course may be retarded, usually makes progress; and life, if not previously destroyed by some other affection, is at length cut short by disease of the kidney.

"For reasons already stated, my remarks have been for the most part restricted to the enlargement of the liver and spleen consequent on the syphilitic cachexy; but I should not have occupied the time of the meeting, were it not for the belief that the subject, when duly considered, will be found to have a much wider scope.

"The enlargement of the liver and spleen, and the albuminuria in cases like those related above, though occurring in sequel to protracted syphilitic disease, are not special syphilitic affections; but are merely the result of the impairment of the general health which protracted syphilis occasions.

"The remark was many years ago made by the late Dr. Graves, that long-continued syphilitic disease induces a state of constitution closely resembling, if not identical with, that to which the term serofulous is commonly applied. The remark is quite true; and it

* The circumstance that the affection of the abdominal glands is especially apt to occur in sequel to caries, suggests the question, whether protracted suppuration tends to cause it?

serves, in some degree, to explain the circumstance, that persons of scrofulous constitution, as a general rule, suffer much more from the effects of syphilis than persons in whom no scrofulous taint exists. Additional confirmation of the remark is furnished by the fact that long-continued scrofulous disease, more especially when the bones are affected, is often followed by disease of the liver, spleen, and kidneys, identical in its nature, as far as we can judge, with that which, in the preceding cases, was the remote effect of the syphilitic virus.

"The disease of the liver, spleen, and kidneys, then, in cases like those related above, is not to be considered as a specific result of syphilis; but as a result of the induced scrofula which protracted syphilitic disease so often occasions.

"The effect of a long course of nitric acid in the cases related above is, therefore, suggestive of the question, What degree of influence does this agent possess in remedying, and, better still, in preventing the glandular enlargements, the slowly healing ulcers, and the other forms of disease that result from the more common variety of scrofula?"

"I have been persuaded by long experience, that in tuberculous disease of the lung, nitro-muriatic acid, long taken, tends to prevent the further deposit of tubercle; and that, in scrofulous glandular enlargements, this acid and, still more, the nitric acid, has often a very beneficial effect. What is the degree of influence which the acid exerts in such cases, and what are the limitations to its use, further and more careful observation must determine."

ART. 73.—*On the Physiological and Pathological Import of Cholesterine.*

By Dr. AUSTIN FLINT, Jun., of New York.

(*American Quarterly Journal of Medical Science*, October, 1863; and *British Medical Journal*, February 7, 1863.)

Cholesterine is a product of the animal body regarding which, though it is found in sufficient abundance, and the localities in which it exists are tolerably well determined, physiologists have as yet failed in ascertaining precisely where it arises, or what becomes of it, or whether it has any pathological importance beyond its frequent presence in gall-stones. Thus, Longet, writing in 1861, says that "it is one of the products destined to be expelled from the economy;" but in what manner he does not attempt to show. Robin and Verdeil also speak of its physiological import as altogether unknown; and, not to quote more instances, our physiological treatises in general are equally deficient of information on more than the existence and locality of this substance.

Dr. Flint has made some observations in order to clear up the unsettled points relating to this substance, and has published his researches in the paper under consideration. He has examined cholesterine in its relations with seroline, a substance found hitherto occasionally in small quantities in the blood, but which Dr. Flint discovers to exist normally in faeces, and which he therefore calls

stercorine. He holds that these two substances—cholesterine and seroline or stercorine—have a direct relation to each other; that the knowledge of this relation is likely to be of great pathological as well as physiological importance; that, in fact, “What the discovery of the function of urea has done for diseases which now come under the head of uræmia, the discovery of the function of cholesterine may do for the obscure diseases which may hereafter be classed under the head of cholesteræmia.”

The general facts that cholesterine is found in the bile, liver, brain and nerves, and also in the crystalline lens, meconium, and (occasionally) faecal matter, and that it is eliminated by the liver, being recognised, Dr. Flint applies himself to the examination of the question, Where is the substance formed? Its principal seats being the liver and the nervous system, he has endeavoured first to determine whether it is formed or merely deposited in the brain and nervous system, by making comparative analyses of arterial and of venous blood. His results, in six experiments on animals, show a marked increase of cholesterine in the blood of the internal jugular vein, and also an increase in the blood returning by the femoral vein, as compared with the blood of the carotid artery. He infers, hence, that the cholesterine is produced in the brain and absorbed therefrom by the blood; and, since the increase in the blood of the jugular vein can only have come from the formation of cholesterine in the brain, he argues, supported by the known results of chemical analysis of the tissues, that the cholesterine found in the general venous system must be produced in the nerves.

To further confirm this theory, he has analysed blood taken from each arm of three patients suffering from hemiplegia; the result being that on the sound side the blood yielded from 0·481 to 0·808 parts of cholesterine per 1000; while on the paralysed side not a trace could be found.

Dr. Flint has also made analyses of the blood of the portal and hepatic veins, as compared with that of the carotid artery. He finds in them proof that cholesterine is eliminated by the liver; and that, apparently, the diminution of cholesterine in the blood of the hepatic vein is nearly equal with the increase of this substance in the blood that has passed through the brain. Hence he sees in the bile two important elements having separate functions.

“1. The bile contains the glycocholate and taurocholate of soda; which are not found in the blood, are manufactured in the liver, are discharged mainly at a certain stage of the digestive progress, are destined to assist in some of the nutritive processes, are not discharged from the body, and, in fine, are products of secretion.

“2. It contains cholesterine; which is formed in the blood, is merely separated from it by the liver, and not manufactured in this organ, is not destined to assist in any of the nutritive processes, but merely separated to be discharged from the body, and is a product of excretion.”

At this point, Dr. Flint takes up the examination of the hitherto undetermined question, What becomes of the cholesterine after it has been discharged from the liver?

Cholesterine has been said by several authors on physiology and physiological chemistry to be present in faeces. Dr. Marcet, however, has noticed its absence; and Dr. Flint's analyses lead him to the same conclusion. Convinced, however, that the substance must be discoverable in some shape, he has, by treating dried faeces with ether and alcohol, &c., obtained a substance in the form of delicate transparent needles, having all the characteristics of seroline. This substance being found in large quantities in the faeces, he terms *stercorine*. It is not, according to him, the same substance as that which has been described by Dr. Marcet under the name of *excretine*.

The observations which Dr. Flint has made in regard to stercorine are as yet incomplete; but he brings forward the following evidence to show that it is a result of a change of the cholesterine during the digestive process. Cholesterine is found in the meconium, where stercorine is absent. This arises from the fact that bile is formed long before any food is taken into the alimentary canal, and before the intestines have had an opportunity of performing their digestive function. As soon, however, as digestion is established and the digestive fluids are secreted, the cholesterine is lost, and stercorine appears in the excrements. In hibernating animals also, cholesterine is found in the faeces during the period when no food is taken, but disappears when the animal awakes and takes food. Again, normal faeces do not contain cholesterine; but, by examining the discharges of fasting animals, Dr. Flint has succeeded in finding small quantities of cholesterine in conjunction with the stercorine. Hence he infers that the change of cholesterine into stercorine is evidently connected with the digestive process.

The effect of cutting off the supply of bile from the intestines or the presence of stercorine in the faeces has been noticed by Dr. Flint in the case of a patient who had jaundice from duodenitis. The faeces were clay-coloured for a time; and, on examination, no cholesterine nor stercorine could be found in them. Nineteen days afterwards, when the faeces had regained their normal colour, they were again examined, and 0·31 of a grain of stercorine was found in 502 grains.

Further, the theory of the conversion of cholesterine into stercorine is supported, according to Dr. Flint, by the fact that the amount of stercorine found in the faeces corresponds very nearly with the calculated average amount of cholesterine discharged from the liver.

Regarding the pathological relations of cholesterine, Dr. Flint promises more complete observations than are contained in his present paper. So far, however, as his investigations have gone, he has arrived at the conclusion that the retention of cholesterine in the blood is liable to produce a train of symptoms of blood-poisoning, which he designates *cholesteramia*. He explains in this way the difference in the gravity and fatality of the symptoms of two forms of jaundice; one being attended only with yellowness of the skin, and dependent merely on the retention of the bile in the excretory passages, and the absorption of its colouring matter; while in the

other the cholesterine is retained in the blood. In the former case, that of simple jaundice, such as that depending on duodenitis, the amount of cholesterine in the blood is not necessarily increased; while in jaundice connected with structural change, ascirrhosis, the increase over the average maximum in healthy blood has been found by Dr. Flint as high as 146 parts in 1000.

The morbid condition which Frerichs terms *acholia* is explained by Dr. Flint on the theory of the retention of cholesterine. In it there may or may not be jaundice; but, as described by Frerichs, the patients may "become unconscious, and be afterwards seized with noisy delirium, from which they pass to deep coma, and in this state die." In one case observed by Frerichs, there was "spasmodic contraction of the muscles of the left side of the face." In such cases, attempts have been made to discover the elements of the bile—biliary acids and pigment—in the blood; it being argued that they ought to be accumulated in this fluid in the same way as urea in uræmia. Yet, as has been shown by Frerichs and Moleschott, they have not been found. Dr. Flint suggests, however, that if search had been made for cholesterine, the result would have been different. As regards this acute form of jaundice, Dr. Flint has not had an opportunity of actually determining the retention of cholesterine; although the analogy of the symptoms referrible to the nervous system with those found in cases of cirrhosis, where the retention of cholesterine has been ascertained, is strongly marked.

The degree to which cholesterine may be retained, and the quantity of stercorine in the faeces correspondingly diminished, varies in cases of cirrhosis with the amount of structural disease. If the liver be but partially affected, the symptoms of cholesteræmia may be slight or absent; for the same reason that the function of the kidneys may be partially interrupted without producing symptoms of uræmia.

These researches of Dr. Flint, of which we have given an outline, and which we hope he will extend, are apparently of considerable importance. They seem to show that, physiologically, cholesterine bears the same relation to the liver and bile as urea does to the kidneys and urine; and that, pathologically, the retention of cholesterine in the blood produces a train of symptoms designated by Dr. Flint as *cholesteræmia*, which may be compared with those resulting from the retention of urea—uræmia. Finally, as Dr. Flint observes:—

"When we add to these conditions the cases of what is ordinarily called biliaryness, attended with drowsiness, an indefinite feeling of *malaise*, constipation, &c. (and all this relieved by a simple mercurial purge, which is said to promote the secretion of the liver), cannot we hope that some light will be shed on their pathology by a knowledge that there is a condition called cholesteræmia? As yet this is but speculation; but the discovery of the important function of cholesterine opens an almost boundless field of inquiry in this direction; and ere long the physician may talk of 'biliaryness' and 'liver-complaint' with some definite ideas of their pathology."

ART. 74.—*Observations on the Treatment of Tænia, especially by the Use of Oil of Male-Fern.*

By Dr. OGLE, Assist.-Phys. to St. George's Hospital, &c.

(*British Medical Journal*, March 14, 1863.)

In this paper Dr. Ogle gives an epitome of twenty-four cases of tænia in a tabular form, and then proceeds to say:—

“ As respects the action of the oil of male-fern, the table, I think, shows pretty well what may be expected of it. Out of the whole of the twenty-four cases in which it was given, in only two cases was there any doubt as regards its poisonous and expellent action on the intestinal worm; and in one (Case 8), seeing that eight yards had been passed but a short time previously, it is not unlikely that there was no worm to be expelled.

“ As regards the period at which, after the male-fern oil had been swallowed, evacuation of the worm was produced, it appears that out of the twenty-four cases (excluding the two cases 4 and 8, before denominated as being doubtful as regards the action of the male-fern, and one case, 18, in which no information whatever upon this point was gathered from the patient), in twelve cases the worm was expelled within a short time after taking the remedy, and before the castor oil or other subsequent dose was given; in one case (13), it brought away the worm in one hour and a half after having been swallowed; in another case (18), in two hours afterwards; in another case (23), in three hours.

“ Touching the action of the remedy upon the patient, irrespective of its vermicide and vermifuge properties, it will be seen that, in by far the majority of instances, this action was not in any degree or manner troublesome or disagreeable. In Case 10, the patient, aged 21 years, was described as having been rendered ‘very ill’ by the medicine; in Case 11, as being made ‘ill all over,’ ‘weak, and trembling’; in Case 23, a ‘good deal of pain’ was complained of when the worm was voided; and in Case 16, pain was experienced in the bowels about an hour after the male-fern had been taken. But, in by far the majority of the cases, it is expressly stated that no discomfort resulted from the medicine; and in none other were any complaints of it made. In Case 11, that wherein so many unpleasant effects were experienced during the action of the drug, it is noticeable that the worm was only expelled after four doses had been taken.

“ Cases 1, 10, and 12 would appear to show as decided a superiority in the vermicide action of this medicine, compared with turpentine, as it is superior on the score of taste and agreement, &c.

“ Such are the results which may be elicited by a consideration of the table, regarding the utility of the oil of male-fern in the treatment of tænia. I hope to continue to give this remedy in such cases; taking care, if possible, to learn all particulars regarding the mode of life, kind of food used by patients, and specially with reference to the eating of raw meat, ham, bacon, sausages, &c. I shall also

take the precaution, which I would recommend to others (following the custom adopted with the nurses at Guy's Hospital), of promising a premium upon every 'root' or head of the worm brought to me by the patient, so as the better to secure them; and, when possible, to admit the patients as in-door patients for a day or two, for the purposes of observation.

"I will now pass on to make one or two observations which my notebook suggests respecting the uses of other remedies in tape-worm. Thus I find, amidst a great number of other cases of which I have record (but so imperfect in various ways that I could not adduce them along with those placed in the table), that the oil of male-fern has certainly acted vigorously and abundantly in the destruction and expulsion of long lengths of the tænia when the kamæla (written also kamayla, kamala, and kamela) has failed. The form of kamæla which I used was the tiniture, two drachms being the medium dose for an adult. In one case—a child, aged 4 years—after in vain trying the tincture of kamæla, forty drops of the male-fern oil, in mucilage, syrup, and mint-water, caused the expulsion of ten yards of the worm within three or four hours after the medicine had been administered.

"I have also given the powder of the *rottleria tinctoria*, in about two-drachm doses, mixed with honey or mucilage, with the effect of expelling lengths of the tænia. In this dose it has been longer, for the most part, before producing its specific action, than the male-fern oil. In one case in which I gave the *rottleria tinctoria*, it is not unworthy of remark that the patient complained that, when the tænia caused intestinal irritation, in addition to a 'mistiness in eye-sight,' a gnawing pain at the upper part of the abdomen and pain in the forehead, he very frequently experienced 'red blotches,' to use his own expression, on the forehead and nose. In this case, I find from my notes that no sickness or uneasiness ensued on taking the *rottleria tinctoria* powder. In other cases, also, this drug has been noticed as acting without griping or discomfort of any kind.

"Again, I have given the *kousso* in ample (half-ounce) doses, but with variable (in some cases quite unsatisfactory) results; also the santonine, with, as yet, negative results. But I have reason to think that my doses of the latter drug have been too small for the purpose. I propose trying it in larger quantities. I believe it may be safely given in ten or fifteen grain doses.

"On one occasion, I found that a two-drachm dose of the extract of *taraxacum* brought away a large number of the tænia joints, the presence of which within the intestines had been unsuspected. It is possible that this vegetable may be rendered available, in suitable doses and form, for the expulsion of intestinal worms; to which, indeed, all 'bitters' appear to be inimical. In another case, a tape-worm was expelled after a large quantity of very strong coffee had been drunk.

"There is another remedy of which I am about to try the effects, in consequence of its strong recommendation by Friedrich of Heidelberg; and that is the picronitrate of potash (*Kali picronitricum*).

"I may remark, that it would appear that in certain cases there

is an attempt on the part of the bowel to dislodge the worm, apart from medicine exhibited. Thus I know of one, a private case, in which for many years the patient has had the tapeworm, and who, every few months, experiences violent griping, with nausea (never vomiting) and diarrhoea, for about half a day, with concomitant expulsion of several yards of the worm. He has never found the root or head of the animal ; but he does not appear ever to have sought for it very systematically. In another case of which I have notes, the patient observed that, contrary to what is usually thought to be the case, he had had three worms of large size expelled within a short period of each other, in each of which the head was found. This observation, though stated honestly by the patient, may, of course, have been erroneous.

"More than once I have found that the *tænia* and the *ascaris lumbricoides* have existed in the human bowel at the same time.

"With one more remark I will conclude, and it is one which may possibly have a practically beneficial effect ; and that is, that I think there may be reason for believing that the *tænia* may be communicated to infants and children from others, and in the following manner. In almost all cases, there is reason to think that a *tænia* does not exist very long within the intestine without portions or joints being passed, not only by stool—*i.e.*, with the faeces—but also by their spontaneously working their way through the anus, and 'skedaddling' (to use an expressive Scotch phrase) from the person, adhering to the garments, or falling on the ground. Now, I have known cases in which there is reason to think that these fragments, which soon desicate, shrivel, and become reduced to a small brownish-coloured mass, may have been picked up by children, often crawling infants, who are ever ready to pounce upon and put in their mouth every crumb or crumblike substance which they can see, and thus have been introduced into the digestive organs. I have no certainty of this ; but I think it is a point worthy of consideration and attention, and one to be mentioned to parents in cases where the *tænia* is known to exist in any members of a family."

ART. 75.—*Two Cases of Cancerous Disease of the Pancreas.*

By Dr. WARD, Physician to the Seaman's Hospital,
"Dreadnought."

(*Lancet*, July 18, 1863.)

Cancerous disease of the pancreas is unquestionably a rare affection. There are but few recorded cases, and the two following only have occurred at the Seaman's Hospital for at least the last seven years. The liver, the stomach, the different parts of the intestinal canal, and the mesenteric and lymphatic glands, are frequently the seat of cancerous deposit ; but the pancreas, for some reason or other, seems to enjoy an immunity from it.

The intimate anatomical relations of the pancreas with the stomach,

duodenum, vena porta, and, under enlargement, with the ductus communis choledochus, render the diagnosis of its affections very difficult. Indeed, on analysing the symptoms of the several reported cases, there is scarcely one that would not be equally characteristic of disease of some one of the adjacent organs. In such cases as the subjoined, where the secreting structure of the gland has been destroyed, or its excretory duct constricted, we might have anticipated assistance from functional symptoms. But the view of the emulsionizing action of the pancreatic juice upon fatty constituents of food has not received confirmation from pathological observation ; for, in the cases in which they have been looked for, fatty matters have not been found in the stools. The subjects of the following cases were of intemperate habits ; but in other cases such habits are not noticed.

Persistent jaundice is a frequent symptom. The causes of this may be arranged under two heads—namely, those affecting the structure of the liver itself, and those implicating the parts external to it, as the gall duct, or ductus communis choledochus. These latter, again, may be subdivided into (1) *internal*, as permanently impacted gall-stones, and obliteration of duct from adhesive inflammation ; and (2) *external*, constricting the ducts by pressure from without, as the products of adhesive inflammation effused around them, enlarged lymphatic glands, cancerous or other tumours of the liver and pancreas. Affections of the latter organ can, however, only produce this result when its head is involved, and enlarged so as to embrace the excretory biliary duct, as occurred in one of the undermentioned and in one or two other recorded cases. The presence of this symptom of persistent jaundice, coupled with a history of paroxysmal pains, tended in Dr. Ward's case, as also in one reported by Frerichs, to increase the difficulty of diagnosis ; and led to the supposition, at first, that there was occlusion of the ductus communis through impacted biliary concretions.

A fixed, hard, circumscribed tumour, coupled with severe lancinating, paroxysmal pain, may be considered as in some measure characteristic of the disease, but would be equally so of scirrhus of the pylorus ; and the same also may be said of the attendant functional derangement of stomach and bowels. One fact worthy of notice in most of the recorded cases is, the insidious manner in which the disease has become developed, and the comparatively short duration of the more formidable symptoms. In one of the following cases the patient had been well until within a fortnight of his admission ; and in the other the symptoms had not lasted many weeks. In the first case recorded by Frerichs, the patient had been quite well up to within six months before admission, and then began to complain of short attacks of severe pain, extending from the region of the gall-bladder to the epigastrium. Seven weeks before he came under Dr. Frerichs' treatment, he became gradually jaundiced. In a second case recorded by this pathologist there had been transient and scarcely noticeable pains in the upper part of the abdomen, and for three months gradually increasing and ultimately persistent jaundice. In a case of Dr. Hughes

Bennett's, there had been for only four weeks pain in the lower part of the abdomen, with costiveness, and subsequently vomiting of food a few hours after taking it. In this case, as in the first of the following cases, the cancerous masses in the glands and lungs bore a close resemblance to tubercle. The treatment in these cases is evidently merely palliative.

CASE.—*Cancerous disease of the pancreas; cancerous deposits in the liver, spleen, and lungs.*—H. T.—, aged 27, admitted Oct. 22, 1862. An ill-nourished man, of a mulatto complexion. Conjunctivæ are of a deep yellow colour, and the skin generally of a tawny yellow tinge; bowels relaxed, and stools deficient in colouring matter; urine abundant, of a deep yellow colour; slight cough and expectoration; pulse feeble; he complains of severe paroxysmal pains in the epigastric region. He was taken ill eleven days before admission with severe pain in the epigastrium, vomiting, and constipation. Has been occasionally intemperate. Came last from New York. Never had a similar attack. He was ordered a grain of podophyllin and half a grain of cannabis indica thrice a day.

Oct. 26th.—Bowels relieved once since yesterday; urine same as before; pulse 90, weak; tongue moist and flabby; appetite good; no mark of hepatic enlargement. To have two grains of mercury pill night and morning. 27th.—Complains of pain in the epigastrium; bowels freely opened; urine the same. To have dilute nitric acid in compound decoction of scoparium thrice a day. 30th.—Has sickness. To take two grains of oxalate of cerium at once, and also at bed-time. Next day an enema of turpentine was given.

Nov. 1st.—Bowels relieved by the enema; complains of constant pain in the course of the ascending colon, which seems much loaded; for this he was ordered croton oil. 3rd.—Bowels freely relieved; stools of a clayey colour; urine the same, contains no albumen; the pains in the epigastric region still continue. A hard circumscribed nodulated mass can be felt in the epigastrium, a little to the right of the mesial line, just below the margin of the ribs; it is somewhat tender to the touch. Ordered to take two grains of podophyllin and half a grain of cannabis indica twice a day. 5th to the 7th.—Stools and urine remain the same; tongue clean; bowels open; pain continues; tumour can be felt lower in the abdomen, and there is gurgling just above it. 7th to the 20th.—The urine and stools remain the same. He has frequent sickness and paroxysms of excruciating pain, has lost all inclination for food, and becomes rapidly weaker and more emaciated. Death took place on Nov. 20th.

Post-mortem examination.—The head was not examined. The abdominal and thoracic organs were deeply bile-stained; the pericardium contained a little dark fluid; the heart was normal in size, and the texture of the valves healthy. Lungs: The left was slightly adherent at the apex; underneath the pleura and throughout its substance were small semi-transparent deposits having the appearance of tubercle, and others much larger, opaque, yellowish, and soft in structure. At the apex of the left lung was a cavity as large as a bean, lined with a thick false membrane; the lung-tissue was congested for some distance around it.

Abdomen: Immediately below the pylorus, and embraced by the duodenum, both of which were pushed very much forward, was a firm nodulated swelling, obviously occupying the position of the head of the pancreas; it extended upwards behind the duodenum, completely surrounding the common bile-duct; the coats of the duct were free from disease, and a probe could be passed along it into the duodenum; the gall-bladder was largely distended, and contained several ounces of dark bile; the lower end

of the duodenum was completely surrounded by the tumour, but its own coats were not implicated; the aorta, vena cava, and right renal vessels were entirely imbedded in large masses separate from the tumour above described, which appeared to replace the mesenteric and lumbar glands. On cutting into the tumour, it was seen to consist of greyish-white material, arranged in lobules more or less isolated by areolar tissue, and easily broken down. The diseased glands were of a still softer consistence. Liver: Nearly normal in size, and dark in colour. Under the capsule were several deposits about as large as a sixpence, of a white colour, with considerably depressed centres, separated from the liver-structure by a remarkably well-defined margin; they were of a very soft consistence. Deposits of the same substance, of various sizes, were scattered throughout the tissue of the organ, which was otherwise normal. The spleen contained deposits similar to those in the liver, and they showed a disposition to arrangement parallel with the trabeculae. The kidneys contained no deposits, and were healthy, with the exception of a few small transparent cysts. Under the microscope the principal tumour and the secondary deposits both showed cells of various sizes and shapes containing large nuclei, many of them more than one. The prevailing shape was oval, while others were lengthened out so as to be fusiform or caudate. Both the transparent deposits above described in the lungs and the larger ones presented the same structure.

Cancerous disease of the pancreas and liver.—Thos. T—, aged 45, admitted Jan. 19, 1863. Has been a hard drinker all his life, chiefly indulging in gin. His last voyage was to China and back. He was attacked a few days before leaving Shanghai with diarrhoea, tenesmus, bloody stools, and other symptoms of dysentery, with constant pain over the liver. He continued work until within eighteen days of the ship's arrival in England, and subsequently spent eleven days at a boarding-house, being successively under the care of three doctors, who all prescribed stimulants, of which he partook very freely.

Symptoms on admission.—Aspect staring and anxious; trembling of the hands and other symptoms of incipient delirium tremens; no appetite, and sleeps very little; the bowels are regular, and the pulse is small; tongue furred. There appears to be considerable enlargement of the liver; dulness on percussion, extending considerably over the left side, and very low upon the right side. He was suffering from slight dysentery, passing, according to his own account, five or six stools each day. Ordered a mixture of dilute nitric acid in infusion of cusparia, and a morphia draught at bed-time, with diet of milk and beef-tea.

Jan. 20th.—Has slept a little; passed three stools; but still complains of severe pains about the stomach and liver. To continue the mixture and anodyne; blistering fluid to be applied to the hepatic region. 21st.—The blister appears to have given great relief; there is much less pain; the tongue is cleaner, and the stools are healthier. To have ordinary diet and six ounces of gin daily. 23rd.—All the symptoms have greatly subsided, and he now complains only of occasional gripping pains, with some looseness of the bowels. A mixture of soda and rhubarb prescribed. 25th.—The diarrhoea still continues; but the motions, though fluid, do not contain blood. A pill of lead and opium was added to the last prescription, to be taken once a day.

Feb. 2nd.—From the last date to this he has got up regularly, and with the exception of slight dyspeptic symptoms, appears tolerably free from discomfort, though weak, and with little appetite. Taking now a mixture of bismuth and bitartrate of soda in an infusion of calumba, with an occasional morphia draught at night. 6th.—The pain has returned. To keep

his bed, and have a blister applied to the epigastrium, with slop diet; to discontinue the gin. 8th.—No appetite; the anxious aspect has returned; he sleeps very little; the bowels are regular, and evacuations healthy; but the epigastric pain appears to increase, and he seems to lose flesh daily. 12th.—No alteration of symptoms since last date. In addition to the mixture, a pill of opium was ordered to be given twice a day. 14th.—Very great pain; fulness and tenderness in epigastrium. An emetic of sulphate of zinc appeared to give great relief. He was ordered arrowroot and eggs in addition to the slop diet. 17th.—Vomiting after food commenced to-day. Ordered an effervescent mixture, with soda-water and brandy. 18th.—The vomiting continued, and recurred at intervals. Creasote was given in addition to the mixture above mentioned, and simple enemata were used to relieve the bowels. The hardness and enlargement of liver appeared to have increased, but there was no sign of material disease elsewhere. Chlorides in urine scarcely perceptible; no albumen. 24th.—The vomiting still continued, and he has lately taken very little nourishment except egg and brandy. He died in the night of the 25th, exhausted.

Autopsy thirty-six hours after death.—Slight rigor mortis. Lungs healthy throughout. Heart healthy. Liver (weight, six pounds and three quarters) studded over its surface and throughout its substance with granular rounded masses, some hard, others consisting of a whitish cheesy matter, but forming collectively about one-third of the entire substance of the liver. Gall-bladder nearly full. Pancreas: The right half was, *en masse*, of stony hardness, and, when cut into, exhibited the same abnormalities of structure as those found in the liver; and left half contained in many parts similar masses of structure. Spleen small. Kidneys normal in size and weight; much congested. Intestines contracted; coats healthy; no sign of tuberculous deposit in the mesenteric glands. The deposit in liver and pancreas was found, on microscopic examination, to contain characteristic cancer cells.

ART. 76.—*Case of Abscess of the Spleen Discharged into the left Lung.*

By Dr. A. A. MANTELL, Bengal Medical Service.

(*Medical Times and Gazette*, May 9, 1863.)

CASE.—J. D., a European, and father of five healthy children, aged 62, and perfectly grey, was placed under my care on Jan. 31st of the current year. He had just arrived in a boat from the coast, where he was employed by Government as a superintendent of a lighthouse. He was accompanied by his wife, who gave the following history of his case:—

She stated that during their thirty-seven years of married life he had always been a strong, healthy man; that as a pilot he had seen much service, and that for many years he had been a very free liver, his favourite drink being rum. He had not been subject to fever, but had had a slight attack of ague before his present illness set in. As far as she could recollect, he had never had any affection of the chest, nor had he ever complained of pains in the loins or abdomen. His appetite was always good, and his bowels invariably regular. His present illness commenced five months ago with sore throat and difficulty in swallowing; he also complained of pain in the right side of his neck.

The soreness of the throat and difficulty of swallowing continued to increase, and on Dec. 31st last he became much worse; on the following day he was unable to masticate his food, and his speech became thick.

During the whole of this period his general health was good, but he was unable to take food in the solid form.

On Jan. 25th he coughed up some dark-coloured blood and matter of a very offensive character. From this time his breathing became difficult, a hacking cough set in, and he daily expectorated small quantities of blood and matter.

On the evening of the 30th he was still worse, expectorating large quantities of the same kind of discharge, and unable to lie horizontally, in consequence of the extreme dyspnoea. During this night he had no sleep, and his wife did not expect him to live till morning.

I saw him for the first time on the following afternoon; he was sitting in a bent posture; his countenance was dusky, and his lips livid; he was at times delirious, and breathing with much noise and difficulty; he had a slight but frequent cough, and with it expectorated an offensive sanguineo-purulent fluid, of a dark brick colour.

He was free from fever, and had a tolerably strong pulse of 84. His tongue was clean; he complained only of his throat, and pointed to it as the seat of pain; nothing, however, abnormal could be felt externally, or seen internally; there was partial paralysis of his tongue, which rendered his speech thick, and difficult to be understood. His lungs gave no evidence of disease—resonance was good on percussion, and the only abnormal sound present was a mucous râle. No enlargement of the liver or spleen could be detected; and he did not complain of pain when his abdomen was examined by pressure and percussion. Ordered nourishing diet constantly, and a stimulant mixture.

Feb. 1st.—He has passed a restless night, especially the early part of it. At times he was delirious, and on several occasions it was feared he would be suffocated by the accumulation in his chest. This morning he appears somewhat better; there is less delirium; his respiration is not so noisy; and the expectoration has somewhat abated; his pulse is 86, and firm; he walks about the room occasionally, in spite of orders to remain quiet, and once nearly fainted in consequence of the exertion. He passed urine once during the night; it was clear, and of a natural colour. His bowels not having been relieved for two days, he was ordered an aperient draught.

2nd.—He appears much better this morning, as he has slept the greater part of the night; his pulse is still 86, and of the same character. He can now lie in the horizontal position without much distress. From his improved condition prognosis more favourable. 2 P.M.—At this hour I was summoned suddenly to see him, and on arrival found that alarming haemoptysis had set in; he had coughed up half a pint of pure blood. Nothing stopped the haemorrhage, and in about twenty minutes he died.

Inspection Twenty-one Hours after Death.—Body pale, but well nourished considering his age. Brain not examined. On removing the trachea, pharynx, &c., the greater cornu of the hyoid bone of the right side was found in a state of caries, and the diseased part was surrounded by a small abscess, which had apparently burst into the upper part of the pharynx. The apex of the right lung was slightly adherent, and the bases of both lungs were firmly adherent to the diaphragm, especially the left; their structure was healthy, but engorged with frothy blood and serum. Heart natural, with empty cavities. Liver smaller than usual, gall-bladder containing greenish bile, and one large black calculus. On endeavouring to remove the spleen, it was found adherent to the diaphragm, and so soft and pulpy that it broke to pieces under very slight pressure of the fingers; the cause of this was an abscess which occupied its structure, and was now

nearly empty ; the walls of it were thin, and what remained of the parenchyma was infiltrated with fetid matter and blood of a brick-red colour, similar to that which had been expectorated during life. The abscess had burst into the left lung, a communication being established between it and the spleen. The fatal haemorrhage was due to rupture of a branch of the left pulmonary artery. The left kidney was hypertrophied, and the right contained an abscess the size of a hen's egg, filled with yellow matter. The stomach was lined with a thin layer of coagulated blood, which had been swallowed during the fatal haemoptysis. The other viscera were healthy.

ART. 77.—Fatal Obstruction of the Bowels from the Presence of an Hydatid Tumour springing from the Mesentery.

By Dr. J. SUTHERLAND.

(*Medical Record of Australia*, Feb., 1863.)

CASE.—The patient, aged 48, enjoying general good health, except a feeling of fulness of the epigastrium, was suddenly seized with severe cutting pains around the umbilicus, and constant desire to go to stool without effect, succeeded by troublesome vomiting and tympanitis of the abdomen. The pain continued, and tenderness on pressure came on, with furred tongue, bounding pulse, and hot skin, &c. In spite of venesection and the use of leeches to the abdomen, &c., hiccough, subsultus tendinum, delirium, and coma came on, followed by death. On post-mortem examination, instead of invagination of the bowels or intussusception, which were expected, a very large oblong hydatid tumour (of the size of an adult human head, and weighing four pounds) was found in the left hypochondrium and umbilical region, which compressed several folds of the ileum so closely as to prevent the possibility of the passage of the contents, inducing gangrene in the parts compressed, and intense peritoneal inflammation in the adjacent convolutions. The tumour was adherent by a small root or pedicle to the left side of the mesentery, having an artery and vein enclosed, and traceable over the interior of the lining membrane of the sac or tumour. The reporter observes that had it been recognised during life, it could easily have been punctured and the fluid drawn off.

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 78.—A Question as to the Pathological Distinctions in Cases of Diabetes.

By Dr. DANIEL NOBLE, of Manchester.

(*British Medical Journal*, Jan. 17, 1863.)

Dr. Noble has been led to think that saccharine urine does not constitute that very formidable question in disease which it is supposed to be—that, in fact, it is not to be regarded as the sure precursor of that particular diabetic condition which almost invariably has a fatal termination. As grounds for his opinion, he relates two cases of diabetes, representing the well-known features of the disease in their most aggravated form; and, after these, two

other cases, the pathological significance of which, he thinks, is essentially different. He says:—

"But there is another class, which I proceed very briefly to exemplify. A gentleman, between fifty and sixty years of age, of great mental endowment, one who had through life pursued a thoughtful and laborious career, had, for upwards of twenty years been accustomed to consult me when requiring medical aid; his ailments having generally been some feverish cold, or a slight degree of gastro-enteric irritation that rendered his digestion habitually weak. For four or five years prior to the summer of 1860, he had been deeply engaged in labours demanding much brain-work, of a kind, moreover, that involved considerable worry and anxiety. About the period just specified, he became troubled with neuralgic pains about the head, with broken sleep and gastric irritation to an unwonted extent. I was constantly urging detachment from business-cares and labours, but this recommendation was but imperfectly carried out; yet to the extent to which it was so, the symptoms were always relieved. Late in the autumn the ailment assumed severer features; for great debility and some emaciation ensued. At this stage of affairs, the patient, having a demand for his presence in London, asked if I would advise him whilst there to consult any one and whom, and I named to him a physician of well-earned distinction for his successful labours in pathological chemistry; my recommendation was acted upon, and the physician in question was seen; and, immediately on the patient's return home, my attendance was again requested. On inquiring if he had seen the London physician, and if he had, what had been said, I was told that he had done so and was glad of it, for the ailment had been found to be diabetes. I must confess, that upon hearing this statement I was somewhat startled, for there neither was nor had been any excessive discharge of urine, nor any dryness of skin, nor any voracity; neither had the urine exhibited that greenish straw colour so often suggestive of diabetes, but, on the contrary, had displayed the same superficial characters which I had noticed for years in connexion with disordered digestion—a somewhat higher colour than usual, and lithic deposits on cooling. However, I could not doubt, after what had been said, that the urine at this time contained sugar, and, having procured a specimen, I took it to an analytical chemist, that it might be quantitatively as well as qualitatively examined. It was found to contain about eight per cent of sugar, and the specific gravity was 1031. I had already said to the patient that, although the urine should contain sugar, I did not think it quite correct that the case should be designated diabetes, if by the term was understood that grave form of it, which, undermining by degrees the forces of life, terminated in death by a sort of gradual decline; and that, indeed, I wished him to rid his mind of such a notion, as being, at least in my judgment, not only not true, but calculated in itself to do him serious physical mischief. I had explained to him, moreover, that it had of late years been discovered that mental irritation, by its action on the brain, might give rise to saccharine urine, and that this phenomenon

was not always of that momentous and fatal significance which the popular estimation of diabetes might lead him to think. However, he had received from his metropolitan adviser both medicinal and dietetic prescriptions—all *secundum artem*, and these, I said, he must in fairness carry out *au pied de la lettre*; I let him understand, nevertheless, that I gave preference to my own practical views, which involved detachment from harassing occupation and thoughts, change of air and recreative amusement, with such medicines and diet as his own particular experience might suggest to be the best calculated to restore the integrity of his digestive functions. After a trial of what I will call the systematic treatment for about a fortnight, he was obliged to give it up alike in its medicinal and dietetic items, for both appetite and digestion became still weaker; and, altogether, he was put more and more out of order; but, all this time, neither the skin nor the quantity of urine gave any of the usual indications of advance in the direction of diabetes as ordinarily understood. Early in 1861, all *system* of treatment was laid aside, my own more general views were carried out, and he began to improve; the quantity of sugar in the urine and the specific gravity also were diminished, varying however from time to time. In a few weeks the percentage of sugar was reduced to five, when, for what I deemed to be good and sufficient reasons, the urine ceased to be examined; the patient had possessed himself of a urinometer and was in the habit of using it himself; and in this way, I thought, he was exercising a prejudicial influence upon his physical condition by unduly fixing his attention upon it; therefore, subordinating my scientific interest in the case to anxiety for the patient's recovery, I urged that he no longer notice the urine, that he forgot it, and, so long as he continued to improve, neither make nor have made any more examinations of this excretion. Through the spring the improvement went gradually on, appetite and digestion better, and the strength increased; by the summer, he might almost be regarded as well. In the month of July, however, he had a most serious attack of summer-cholera, which, after some days very severe suffering, abated; I only saw him once during this illness, as it occurred upwards of forty miles from Manchester; but from what I did see, and from the account furnished by the local surgeon, I am enabled to describe it as most enervating in its effects, and he was for some time much shattered by it; still, neither at the time, nor during the ensuing convalescence, was there any manifestation of the constitutional symptoms of diabetes. This gentleman, when sufficiently well, during the autumn went to Malvern, sanguine from what he had been told, that the water-treatment would invigorate him and perfect his cure; and, for my own part, recognising the benefit to arise from this very mental possession, I raised no objection; and, certainly, on his return home, towards the end of the year, he appeared quite well. For reasons, however, already stated, I neither made nor procured any chemical examination of the urine. During the spring of the present year, the patient had another very severe break-down, in the old way and from the old causes—headache and functional disturbance of the

stomach from excessive brain-work and irregular diet; still no suppression of perspiration, no excess in the quantity of urine, no voracity. Perfect recovery followed. At this time the gentleman is in excellent condition, looking perfectly well and cheerful, and is said by his friends to have a more healthful appearance than he has presented for some years.

"A gentleman of my acquaintance, of high intellectual endowment, and, moreover, of great sensitiveness of disposition, has for the last seven or eight years had saccharine urine—a symptom which ensued upon much anxious mental effort. As he is a resident at a considerable distance, I cannot exactly speak of this gentleman as my patient, although on several occasions I have had conversations with him on the subject of this particular derangement of his health. I think it was about the year 1854 or 1855 that sugar was first discovered in the urine, but he had for many years had an imperfect digestion, evidenced very often by lithic deposits, and he had been a bad sleeper. In this case, there has been none of that steady progress in a downward direction so commonly happening when there is saccharine urine. From the time of its detection to the present there have been several attacks of illness, and on two occasions the patient had been all but given over. I saw him about three years ago labouring under irritable heart as the chief malady; he was in bed and much exhausted, so much so, indeed, that his friends, having regard to the diabetes, scarcely expected that he would rally; yet at this time the specific gravity of the urine was not high, below 1030, I think. The gloomy forebodings were not realized, and recovery took place, enabling him to fulfil important and responsible duties. In this instance, there was, for the most part, a somewhat inordinate appetite, but not any particular dryness of skin nor any great excess of urine. I select for illustration a case, with which I am but imperfectly acquainted however, mainly because the connexion in degree between mental wear and tear and saccharine urine was on several occasions quite notable; for example, about four months ago, the patient was abroad accompanied by an intimate friend, from whom I had shortly afterwards the information that, during this absence from home, circumstances occurred to produce great stress of mind, breaking down the health for a brief period; that, apparently in consequence, the diabetic symptoms became very much aggravated, the specific gravity of the urine running up to 1051 from 1025. On the enjoyment of quiet and the restoration of mental calm, the *status quo* was very speedily recovered; and, since this occurrence, the patient has been better than for a long time before. Indeed, a gentleman well acquainted with him, writing about a month ago to me on another subject, refers to our common friend as follows: 'He keeps well; I suppose there never was known such a case.'

"I think there can be no doubt that the class of facts, very imperfectly exemplified by the preceding accounts, demands the inference that some causal relation subsists between certain pathological states of the brain and the excretion of sugar by the kidneys; showing, as it would appear, that mental perturbation is one of the

first links in the chain of diabetic phenomena, and showing, moreover, that the degree of mischief exhibits some correspondence with the intensity of the presumed cause. Indeed, so obvious is the relation in question, that it has been suggested by some, that diabetes mellitus is essentially of encephalic origin; and, certainly, if pathological distinctions cannot be established, there is much evidence that may be cited in maintenance of some such thesis. The well-known experiments of Claude Bernard, repeated and confirmed by Dr. Pavly in this country, furnish no little plausibility to the doctrine; they show that saccharine urine can be artificially produced by mechanical irritation of the floor of the fourth cerebral ventricle. And other experimental lesions of the nervous system, moreover, have been found to produce diabetic symptoms since the one first practised by M. Bernard. Ordinary brain-disease will sometimes develop for a time a saccharine condition of the urine. The case of the late Mr. Hopwood, which attained so much notoriety in the year 1855, on a trial affecting the validity of a will, supplies an excellent illustration of this position. In 1849, five years before this gentleman's death, it appeared from the evidence given on the trial by his very intelligent medical attendant, Mr. Abraham Wood, of Rochdale, that at the period mentioned he began to suffer in his head, complaining of pain, somnolence, and intolerance of light—symptoms attributed by Mr. Wood to congestion of the brain, and which later on were followed by paralysis and dementia; 'he had also another ailment,' said Mr. Wood, 'an affection of the kidneys.' On cross-examination, he was told to say what this affection was, and he stated that it was 'diabetes mellitus,' and then that this was recovered from in ten days or a fortnight. Hereupon, Sir Fred. Thesiger, the cross-examining counsel, seemed to think that he had got hold of a good point for weakening the force of Mr. Wood's evidence, for, echoing the general popular impression concerning the necessary fatality of diabetes, he observed: 'That (*diabetes mellitus*) is the incurable kind, is it not?' To this interrogatory Mr. Wood very sensibly replied, 'It depends upon the cause.' Sir Frederick, however, pursued the topic, resting upon the position that the ailment in question could never be recovered from, and that Mr. Wood did not know what he was about; but that gentleman was quite a match for the clever counsel, stating that he had not merely been led to the diagnosis by the general symptoms, but that he had tested the urine and detected the presence of sugar.

"Now, the question which I would propose, and the question to which all that has preceded is introductory, is this: Is it possible to establish pathological distinctions in cases of diabetes, according to their *origin*, the *course of the symptoms*, and their *curability*—characteristics which, under many circumstances, supply the basis of such distinctions? In all these particulars, there would seem to be a wide difference between such instances as those last cited and those which I sketched in an earlier portion of this paper, the presence of sugar in the urine being almost the only phenomenon common to the two sets. May we not expect that, in further pro-

secution of our investigations in this direction, we may be enabled to determine distinctions in cases exhibiting sugar in the urine, just as now we can and do, but could not formerly, in the analogous instances of albumen in the urine? When Dr. Bright demonstrated the pathological connexion between granular kidney and albuminuria, it was for some time afterwards regarded as constant; and albuminous urine was consequently regarded as possessing a much graver significance in all cases than it is now known to have in many; for, at the present day, this symptom is known to be expressive of pathological states various in their kind, and involving great differences alike in their origin, course, and curability; hence, we estimate the general character of albuminuria, not by the amount of albumen in the urine, but by the morbid causes which have brought this irregular excretion about. Is it not practicable, then, to establish, or to discover, in like manner, scientific as well as practical distinctions in cases of diabetes? I would venture, myself, to express the conviction that modern researches are tending in this direction; and it is to stimulate attention to this view of the subject, that I have brought forward the question upon the present occasion, not, I need hardly say, in the form of a clinical contribution scientifically complete, but rather in that of an exposition of a course of thought initiated by the incidents of a casual experience."

ART. 79.—*Case of Diabetes Treated by the Use of the Turkish Bath.*

By DR. R. H. GOOLDEN, Physician to St. Thomas's Hospital.

(*British Medical Journal*, September 12, 1863.)

CASE.—Wm. Spence, aged 21, farm-labourer, was admitted into Luke's Ward, on February 10th, 1863. He had been ill five months, from his own account. He complained of great and increasing debility, so that he was obliged to give up work, becoming very much emaciated, and having intense thirst. The skin was dry and harsh. He passed large quantities of urine. He had good appetite; no cough. The chest was well developed and healthy. Pulse 84, feeble. The tongue was coated with dirty mucus, brown in the centre, and very red at the apex and edges. He had no headache; no recollection of a blow on the head or accident; nor had he suffered from other illness.

The emaciation and debility were excessive, so that he appeared to take little notice of what was passing about him; and roused himself with difficulty to answer questions. The specific gravity of the urine was 1041; the quantity as yet was not determined.

On admission, he had a warm bath; and his hair was cut close. He was ordered five grains of calomel and five grains of Dover's powder at night, and a senna draught in the morning; a drachm of sulphate of magnesia in peppermint-water three times a day. The urine, being measured, was found to be thirteen pints.

Feb. 21st.—The quantity of urine was fifteen pints; specific gravity, 1043. He left off his medicine, and was ordered a Turkish bath on alternate days.

Feb. 25th.—The amount of urine was ten pints; specific gravity, 1041. The diet of this patient was determined at this date as follows:—Mixed diet

—Twelve ounces of bread, and three-fourths of an ounce of butter; one pint of tea with milk (no sugar) for breakfast; and the same for tea; milk, with rice, or bread-pudding. Alternately for dinner—Half-pint of milk; four ounces of roast meat when dressed, without bone. Extras: Greens; half a pound of beefsteak; a pint of porter; two eggs; and an unlimited supply of water, lemonade, and other hospital drinks.

March 4th.—Urine of specific gravity, 1040; quantity under ten pints.

March 11th.—Urine of specific gravity, 1037; quantity under ten pints.

He was very much more alive and cheerful, and increasing in strength.

March 14th.—Urine of specific gravity, 1030; quantity under ten pints.

March 21st.—Urine of specific gravity, 1037; quantity under nine pints.

April 1st.—Urine of specific gravity, 1027; quantity under eight pints.

April 4th.—Urine of specific gravity, 1030; quantity under seven pints.

The specific gravity was less after coming from the bath.

April 8th.—Urine of specific gravity, 1031; quantity under seven pints and a half.

April 18th.—Urine: specific gravity of two portions, taken at different times in the day, 1041 and 1030; total quantity under seven pints and a half. He had been taking some sweetmeats, which accounted for the higher specific gravity.

April 25th.—Urine of specific gravity, 1030; quantity under seven pints.

May 6th.—Urine of specific gravity, 1030; quantity under six pints.

May 13th.—Urine of specific gravity, 1031; quantity under five pints and a half.

The bath was omitted.

May 20th.—Urine of specific gravity, 1032; quantity under six pints.

May 30th.—Urine of specific gravity, 1032; quantity under six pints.

June 3rd.—Urine of specific gravity, 1035; quantity under five pints.

The bath was now resumed.

June 6th.—Urine of specific gravity, 1030; quantity under five pints.

June 13.—Urine of specific gravity, 1030; quantity under five pints.

The pepsine was discontinued.

June 27th.—Urine of specific gravity, 1031; quantity under five p'nts.

July 1st.—Urine of specific gravity, 1028; quantity under five pints.

July 15th.—Urine of specific gravity, 1030; quantity under five pints.

July 18th.—Urine of specific gravity, 1028; quantity under five pints.

Gluten bread was ordered as a substitute for hospital bread.

July 22nd.—Urine of specific gravity, 1033; quantity under five pints.

July 29th.—Urine of specific gravity, 1035; quantity under five pints.

Since taking the gluten-bread, he has suffered much dyspepsia; and shows more sugar in urine.

I will not offer any remarks upon this case, beyond the fact that it is uncomplicated with remedies. Although not cured, and still under treatment, it shows that, in this particular instance at least, the bath is as powerful a remedial agent as any that we have tried.

The sweat has been several times tested, and there is not a trace of sugar in it; but the usual quantity of urea and chloride of sodium; differing not at all from the results given in the perspiration of healthy persons.

The skin has become soft and perspiring. He has increased in weight and muscular development; so that he has become capable of doing good work, and makes himself useful in the hospital. He is a very cheerful and intelligent man for his station: in strong contrast to his first appearance.

I was induced to try the Turkish bath in this, which I considered a hopeless case, because I had heard of a case (not very well authenticated) which

had been relieved at one of the public baths. I was satisfied that, with proper care, very debilitated patients may be subjected to it without any fear; and having the patients under our own control, we could stop them at any time. And, moreover, a number of cases (seven) of albuminuria with dropsy, and in some cases with heart-disease, have been subjected to the Turkish bath, without any inconvenience in any one case. Four of these cases have got entirely rid of albumen in the urine. All these cases have been relieved of the dropsy. When I have other cases of diabetes in the hospital (and I shall be glad to receive any, if sent from any part of the country by medical practitioners) I will report progress.

Since the above report, the quantity is reduced to four pints, and specific gravity from 1022 to 1030; and this improvement followed the application of ice to the cervical vertebra in an India-rubber bag, as suggested by Dr. Chapman.

ART. 80.—*Effects of Diet and Drugs in the Treatment of Diabetes Mellitus.*

By DR. ANDREW SMART.

(*Medical Times and Gazette*, February 14, 1863.)

Dr. Smart gives the following results, obtained from a series of observations—in two cases of diabetes mellitus treated by Dr. Laycock, in the Royal Infirmary, Edinburgh—instigated with the object of determining the sugar-producing agency of certain articles of diet.

The following articles are arranged in the order in which they were found to act as sugar producers:—

“ 1. *Sugar* (cane), whether used as an article of diet or medication, besides undergoing transformation into grape sugar, acted as a powerful diuretic and stimulant to the morbid production of sugar. It also greatly increased thirst.

“ 2. *Rice*, contrary to general belief, was next to sugar in its influence on the production of diabetic sugar and increase of urine. Its action in these respects was much greater than can be explained by reference to the proportion of starch and sugar which it contains.

“ 3. *Potatoes* were inferior to rice in their sugar and urine-producing powers, but exerted a markedly greater influence than the ordinary sorts of wheaten bread.

“ 4. *Gluten Bread*.—We have not succeeded in ascertaining the exact composition of the bread usually sold under this name. It is decidedly sweet to the taste (but this saccharine quality does not depend on admixture with sugar). It is also very palatable, and preferred by diabetic patients to ordinary bread. It has been much recommended in diabetes, under the belief that, as an article of food, it operated more mildly in exciting and maintaining morbid action. This opinion was contra-indicated by repeated and careful trials, the results of which demonstrate that its influence as a sugar eliminator exceeds that of ordinary white and bran bread.

“ 5. *White Bread*.—The trials with this bread, as with the others, were extremely varied, but invariably with like results. It undoubtedly produced less sugar than gluten bread, but was superior

in that respect to brown bread and oatmeal. It is interesting to know that the amount of sugar found in the urine invariably maintained a fixed relation to the combined proportions of sugar and starch contained in the bread, the proportion of diabetic sugar always exceeding that of the starch and sugar elements as two to one. Thus, for example, if the amount of bread taken in twenty-four hours contained, say 500 grains of combined sugar and starch, and no other substance interfered with the experiment, a careful analysis of the urine during the same period yielded, with remarkable uniformity, nearly double that amount—*i. e.*, somewhere about 1000 grains.

“6. *Bran Bread.*—This bread differed in no important particular, except in its milder action in the production of sugar. But this difference was trivial.

“7. *Oatmeal.*—The influence of this cereal, when given weight for weight with the others, was so decidedly less that there can be no doubt in placing it last in the list now given. It diminished the amount of urine while rather heightening its density, but, as an article of diet, it was not relished by the patients.

“8. *Eggs.*—When the patients were put on an exclusively egg diet, the amount of urine and sugar progressively diminished, and the latter would probably have disappeared entirely from the urine had it been possible so to restrict the diet for a sufficiently lengthened period.

“9. *New Milk* contains sugar, as sugar of milk; but judging from all the trials which were made with it, we were led to infer that this constituent does not undergo glucose transformation. Under this, as in egg diet, the sugar progressively disappeared from the urine. But the great difficulty always experienced was, to confine the patient for some time to one or two kinds of food.

“10. *Animal Diet.*—When eggs, milk, fish, beef, mutton, and all other kinds of animal diet, were given either alone or in combination, the following results invariably followed: 1. Marked decrease in the elimination of sugar and secretion of urine, which was progressive with the continuance of the diet. 2. Sense of hunger and thirst greatly lessened. 3. Increased density of urine.

“11. *Vegetables*, such as cabbages and turnips, sensibly augmented the production of sugar, but to a much smaller amount than is generally supposed. They were also apt to derange the digestive system. Cabbage invariably produced diarrhoea in one of the patients, and in the other indigestion and flatus.

“12. *Cod-liver Oil and Fats.*—Their use was followed by the same results as were found in the animal diet trials; but they could not be taken by the patients for some time, or in considerable quantity, without inducing nausea.

“13. *Mixed Diet.*—The production of sugar under this diet, of whatever substances it may be composed, was found to be invariably proportional to the amount of sugar and starch contained in the articles which were used.*

* *Porter and Alc.*—It is generally supposed that all malt liquors very powerfully stimulate to the morbid production of sugar in diabetes mellitus;

"Series of Trials to Determine the Influence of Remedies on the Elimination of Diabetic Sugar."

"1. *Permanganate of Potash*, allayed thirst, lowered the density, but increased the amount of the urine and also of the sugar.

"2. *Sesquinitrate of Iron* stimulated appetite for food; did not allay the thirst; did not materially influence the amount of urine, but increased that of the sugar.

"3. *Glycerine* markedly increased thirst and the amount of urine; lowered density of urine, but total amount of sugar greatly increased.

"4. *Chloroform*.—This was exhibited by inhalation, which was repeated every two hours during the experiment. Quantity of urine greatly increased; its density lowered, but total amount of sugar in twenty-four hours increased. Chloroform increases sugar simply by acting as a diuretic.

"5. *Sulphuric and Chloric Ethers*.—Both these agents operate as chloroform, but in a much less marked degree.

"6. *Strychnia*.—The experiments with this powerful agent were begun by administering $\frac{1}{40}$ th of a grain thrice daily, and the dose progressively increased until its physiological action on the nervous system became incipiently apparent.

"The result was a progressive and commensurate decrease in the amount of urine and sugar. The patients' diet during the course of this and the other trials of remedies was uniform. The patients' general health was good, and they gained weight."

ART. 81.—On the Excretion of Sugar and Urea under the Use of Benzoic Acid in Two Cases of Diabetes Mellitus.

By Dr. STOCKVIS.

(*Henle's u. Meissner's Bericht*; and *Edinburgh Medical Journal*, Oct. 1863.)

In two diabetic patients, Dr. Stockvis observed that in this disease the benzoic acid administered associates itself in the liver with glycine, and appears in the urine as hippuric acid. In these two patients the sugar in the urine during the use of benzoic acid was considerably less than previously and afterwards. A diminution of urea was also noted, as long as hippuric acid was excreted, and the increase of urea, when the benzoic acid was stopped, was remarkably apparent. In a third case, in which benzoic acid was given, no hippuric acid was found in the urine, nor was there a diminution of the sugar and urea. The author supposes that benzoic acid causes an increase of oxidation in the economy, so that more sugar is burnt.

but the experiments made with ale and porter do not support that opinion. Their use, to the extent of twelve or twenty-four ounces daily, is attended with little more than an appreciable increase in the amount of sugar. The rate of increase, as in the other articles, was ascertained and recorded.

ART. 82.—*A Case of Encephaloid Disease of the Bladder, with Remarks on the Semiotic Value and Treatment of Hæmaturia.*

By Dr. RANKING, Physician to the Norfolk and Norwich Hospital, &c.

(*British Medical Journal*, August 22, 1863.)

CASE.—The subject of the following case, which has recently proved fatal in the Norfolk and Norwich Hospital, first came under my notice as a private patient in consultation with Mr. Allen of Norwich. He was at that time 58 years of age, and lived in an ill-ventilated and low part of the city. He did not, however, appear to suffer from the unfavourable hygienic conditions by which he was surrounded; but with the exception of occasional rheumatic attacks, he had never had any serious illness, until the commencement of the formidable symptoms, which eventually proved fatal. Of these he was suddenly made aware, by finding that on attempting to empty his bladder, he passed a large quantity of blood. On this, he immediately placed himself under medical care, and it was after the failure of a judicious line of treatment by Mr. Allen, that I was requested to see him.

On visiting him, I inquired minutely into his antecedents, more especially with the view of ascertaining the source of the haemorrhage, whether it was from the kidneys or from the bladder. To elucidate this important point, careful inquiries were made as to the prior existence of lumbar pain, and as to the fact of gravel or larger concretions having or not having been passed. I also inspected the urine as to the blood being intimately mixed with it, or whether the blood was passing either *per se* or in large quantities accompanying the discharge of urine rather than mixed with it. The discovery that the blood was passed under the latter conditions led me to the diagnosis, which was verified after death, of malignant disease of the bladder.

At this stage of the disease, as no suspension of the haemorrhage took place, the man was made an in-patient in the Norfolk and Norwich Hospital, in October 1862. On admission, he was almost in a state of collapse, blanched to the greatest degree, and passing large quantities of dark blood, partly fluid, partly in clots, the passage of which caused much painful straining. On some occasions the entire discharge was fluid blood, by which the bladder had become so distended as to call for its evacuation. On this occasion also, as well as his fainting condition would allow, I obtained from him a confirmation of his former history, and when reaction permitted, requested Mr. Williams to explore the bladder. The result of this operation was, that there was no stone, but simply a thickened and pulpy feel of the coats of the bladder as imparted by the instrument. This was, of course, another link in the chain of evidence as to the real nature of the disease, and a microscopic examination of the blood was the only further step necessary. This was also obligingly done by Mr. Williams, with the result of finding cancer-cells, and thus settling the question definitively.

Any prospect of curing or even materially alleviating the symptoms of the patient being now regarded as distant, it still became a matter of urgency to arrest the bleeding, which was rapidly exhausting his vital powers; but as hitherto, all the medicines usually relied upon in such cases, as gallic acid, matico, turpentine, and acetate of lead, &c., had failed, this was a result not very easy to be accomplished. I had, however, several

times and in serious haemorrhages from other sources, as the lungs, bowels, and uterus, seen the good effects of a secret remedy known as Ruspini's styptic, and therefore determined upon its employment. Its effect in moderating the haemorrhage was beyond expectation, three or four doses sufficing to make a marked change in the appearance of the urine, so that in three or four days all sanguineous colouration had disappeared. This might be thought by some to be a sequence, not a result; but further experience of the case proved cause and effect much more clearly than we are often able to establish with other medicines. In fact, from the ridiculously extravagant price of this remedy, it became expedient in a charitable institution to dispense with its use as speedily as possible, and it was accordingly suspended. But no sooner was this done, and gallic acid resumed, than copious haemorrhage again appeared, and the styptic was a second time resorted to. This unlucky coincidence occurred again and again, till the persistence of the medicine was determined on, and with such good results in the mere absence of the sanguineous drain, that the patient gained so great an amount of strength as to induce him to return home.

After this period, he made several appearances at the hospital on the out-patients' days, but each time exhibiting a further increase of the exhaustion and cachectic pallor of the skin. As a matter of charity, therefore, he was readmitted on April 4th, in a state of great debility, but with the additional symptom of severe pubic pain, extending to the left testis and down the inner part of the left thigh. His bladder was now very irritable, acting painfully every hour; his urine containing much albumen and an abundance of lithates, but no blood. The pubic region was so tender at this time that he could scarcely bear the slightest pressure, but it was easy to discover the presence of a rounded tumour extending nearly to the umbilicus, and perfectly immovable. This tumour gradually enlarged, and after a few days of increased suffering, he appeared to sink from exhaustion, and died twenty-four days after readmission; a suspension of the urinary secretion apparently having preceded the fatal termination.

The autopsy revealed an emaciated frame, with a manifest prominence of the lower abdominal region. The lungs and heart were healthy; the liver was of normal size, and on its diaphragmatic surface exhibited a large mass of encephaloïd cancer, white and concave; the rest of the organ was apparently healthy. Both kidneys were large and deeply congested, and the left had its pelvis and ureter largely dilated and distended with urine. The lower part of the abdomen was occupied by a large tumour of the size of a child's head, evidently the bladder converted into a solid mass, by the occupation of its left wall by encephaloïd cancer, which had so much developed itself internally as nearly to obliterate the vesical cavity. The iliac glands were also cancerous, and the vesiculae seminales and adjacent parts were agglutinated together into a large supplementary tumour. The whole mass weighed three pounds, and was made up of soft medullary cancer, much of it in a broken down condition. The explanation of the enormously dilated ureter was found in the obstruction of its vesical orifice in the immense cancerous mass which had specially invaded that part of the organ. Under the microscope were seen the compound cells of malignant disease with abundant cancer-cell nuclei, but no fibres.

When the case was first seen, it was naturally enough diagnosed roughly as *haematuria*; this term, however, is only descriptive of one objective symptom, not of the lesion from which the bleeding arises. In all these cases, therefore, it is necessary to turn over in our minds all the sources of bleeding from the urinary passages, not so much perhaps with reference to

the treatment of the particular symptom, haemorrhage, but for the purpose of arriving at data for a correct prognosis, on which a medical reputation may depend in fatal cases, as much as on successful treatment in curable ones. In following up this inquiry, it is practically perhaps most convenient to put questions first, having reference to the possible origin of the haemorrhage in the kidney. We must ascertain, for instance, whether the patient have ever had gout, or whether his urine have been habitually highly coloured and charged with deposit, or more particularly if he have passed calculous concretions. If we elicit any affirmative evidence of this kind, associated with old standing lumbar pain, or with the history of an attack of nephritic colic, we may with some propriety regard the kidneys as the seat of the haemorrhage, and this view will be confirmed, if the blood be intimately mixed with the urine instead of being passed *per se*, or in clots.

If, however, on the other hand, there be no precise history of lumbar pain, but only complaints of pain or uneasiness confined to the pelvic region; if the blood be passed pure and sometimes unmixed with urine, and more particularly attended with straining for the passage of clots, we shall be justified in suspecting the bladder rather than any other portion of the urinary tract.

But, having thus ascertained that the blood comes from the bladder, we have still the further inquiry to make, On what condition of the bladder does it depend? Is it caused mechanically by the wounding of the coats of the bladder by some foreign body, as a rough oxalate stone, for instance, or does it arise from some malignant disease of the bladder itself? This is an important question, for upon its solution depends not only our prognosis, but our treatment. In the case of a calculus, relief is obtainable by surgical measures; but, in the case of malignant disease of the bladder, surgical explorations are injurious, and death may be looked upon as ultimately inevitable. To make this diagnosis we have two sources of information to rely upon; that afforded by the general symptoms, and that of tactile evidence. For instance, in haemorrhage from calculus, the bleeding is seldom copious, is only an occasional phenomenon, following perhaps upon some accidental cause, as riding on horseback, or a sudden jolt or fall. The haemorrhage on the contrary, when arising from fungoid or cancerous disease is copious, passed pure as blood, and is accompanied by coagula; and if checked, as in the present ease, will return at close intervals. As in this case also, the peculiarly cachectic aspect of the patient will suggest the true nature of the disease.

Respecting the treatment of haematuria. I need not say that where the loss of blood is slight, and apparently caused by congestion of the kidneys only, as after scarlatina, it is to be met by such means as are likely to remove the congestion, as warm baths, medicinal sudorifics, and in some cases by cupping over the loins; but where the loss of blood by the urinary passages is in itself a formidable symptom, irrespective of its proximate cause, we shall find ourselves called upon to restrain it, at the urgent solicitation of the patient, if not at the indication of strict medical science. The drugs usually prescribed for this purpose are gallie acid in ten or twenty-grain doses, matico, and turpentine in from five to twenty drops. Each and all of these may succeed in individual cases of medium severity; but it will sometimes be found, where the loss of blood is more profuse, that in haemorrhage, whether from the lungs, from the stomach, or kidneys, or still more so from a bleeding cancer of an internal organ, as in our case, none of these remedies can be depended upon; and yet this profuse bleeding will be occasionally under the command of a medicine before mentioned, Ruspin's styptic.

No friend to quackery in any shape, and indisposed as I am to the use of

any medicine which is not openly made known to the profession, I confess I have thought it my duty, where life was in the scale, to exhibit this preparation in various alarming haemorrhages. Such has been the case with the subject of this paper, who has repeatedly had all traces of blood vanish from the urine after a few doses of it, to see the symptom as surely return when it was left off. I think you will allow this to be a sufficient justification for its exhibition.

A few more words with regard to this poor patient's end. As I have said, he left the hospital to all appearance with the complete subsidence of the haemorrhage, the symptom which had most threatened his life. But the truce was fallacious; the malignant disease no longer bled, but it developed itself in the walls of the bladder with rapidity, until a tumour which reached the umbilicus was formed in the course of a few weeks, blocking up the ureters, and causing him to die much in the mode which is seen in fatal retention of urine.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

CONCERNING INFLAMMATION.

ART. 83.—*Observations on Pyæmia.*

By Mr. RICHARD QUAIN, Professor of Clinical Surgery in University College, London.

(*Medical Times and Gazette*, July 11, 1863.)

These observations, which are taken from a lecture on some cases of amputation occurring recently in University College Hospital, are well deserving of attention. Mr. Quain says:—

“Four amputations were performed nearly at the same time, and the patients were in the hospital together. Two were attacked by pyæmia and died; two recovered without having been affected with that disease. Is there anything in the facts of the cases to account for the different results?

“The prevailing opinion is that there are certain circumstances which lead to the production of that pest of surgery—for so that may indeed be called which, as statistics show, destroys nearly half the cases of primary amputation. Nothing in connexion with pyæmia is of so much importance as the discovery of what the circumstances conducive to the disease really are, for to avoid the so-called ‘predisposing causes’ would be to prevent pyæmia. It is stated in treatises on general surgery that these causes may be looked for in the previous and present condition of the patient as to general health and strength, and in the circumstances in which the patient is placed after operation. *a.* The previous existence of ill-health, disease, or other source of debility, renders, it is asserted, the patient less able to resist the injurious influence of bad ‘surrounding circumstances;’ which, in such cases, are said to be found in the impure air of a hospital crowded with patients, badly constructed, or unclean. Suppose we apply the seemingly reasonable statement as to the nature of the predisposing causes to some of our cases:—Two were healthy males, two unhealthy females. Only the latter two recovered. To make the comparison as close as possible, let us take the case of primary amputation of the upper limb. The male

(Case 3) was young, vigorous, and in perfect health; he suffered nothing from the 'shock' either of the accident or of the amputation; nothing from the chloroform, or rather was so far from this, that he asked for, and took with relish, a good meal an hour after the operation. He had not one unfavourable symptom before the fourteenth day; his tongue was clean; his countenance and skin natural. Even after the fatal rigor, he continued for a week to take food well, and to be interested in external circumstances, insomuch that he read a newspaper the day before his death, and was at the same time free from indications of serious disease. Yet he had pyæmia, and died. Now turn to the other picture. A female (Case 2), habitually a drunkard, and subject to fits of delirium, deliberately, by a slow process, cut off her own hand; she lost blood largely, was pale and bloodless in appearance, was delirious after the amputation (the surgical amputation), and much depressed for weeks, vomited frequently, took little food or support of any kind except stimulants, yet the wound continued to heal without interruption, and the patient recovered. (Her health is now—June—as good as ever.—S. G.) So likewise in Case 1, the system was depressed by previous long-continued pain and illness, she vomited after every kind of food for more than three weeks after the operation, yet the stump went on meanwhile to heal prosperously.

"So much for the 'personal condition' of our patients; now a word as to the 'surrounding circumstances.' What was the state of the hospital at the time referred to? You know from your own observation that very recently every part had been cleaned, painted, and washed: that the areas and ground around the hospital had been fully cleansed. The male patient, whose case has been dwelt on, was not in a crowded ward; in fact, he had a ward to himself, a small one, certainly, but one intended for two patients, and ventilated with a fireplace and two windows, as well as the door; the same ward in which there is now a patient recovering from amputation close to the shoulder-joint, who is in perfect health. The boy who died (Case 4) was in a ward exactly corresponding to that in which the Cases 1 and 2 were lodged.

"In short, while the surrounding circumstances were favourable in all, there were present in Cases 3 and 4 all the conditions which enable the system to resist disease, yet both died; and in Cases 1 and 2 everything that favours the production of disease seemed to be present, yet both did well.

"We should not leave these cases without noticing the history of a patient brought to the hospital while some of them were still with us.

CASE.—A delicate boy, aged 15, was admitted April 21st, 1863. A fortnight before admission he had received a blow just below the knee. This was followed by pain and swelling of the part injured, and in a few days by great general depression, vomiting, and delirium; no rigors. On admission he was semi-comatose, and in a perfectly "typhoid condition." The leg was swollen and very tender. Both elbows and wrists became red and swollen. He died April 23rd, two days after admission.

Post-mortem.—Periosteum of left tibia separated for nearly whole length,

puriform matter being interposed between it and the bone. Both lungs were studded throughout with minute collections of matter. There were similar puriform spots in both kidneys. Liver healthy.

"It was ascertained upon inquiry that this lad had been engaged in a trade which was not unhealthy—that of a goldsmith; that he was well lodged, sleeping in a room alone, and in a healthy district.

"Here is an example of pyæmia which arose neither in a hospital nor after a surgical operation, but in the course of what there was evidence to show had been fair previous health, and among 'surrounding circumstances' not conducive to disease.

"With these cases, and such as these before us, surely it must be allowed that much still remains to be found out respecting the 'pre-disposing causes' of pyæmia, and the means to be taken to prevent it, or to lessen its amount. It prevails at one time much more than at another, and when it is known to prevail, operations which are not imperative to be performed at once, are deferred. It is to some atmospheric condition at present unknown that I am disposed to look for the solution of the difficulty. Practically we must advise cleanliness and other means of health; for though the presence of all circumstances conducive to health will not, as we have seen, prevent occurrence of pyæmia, yet, because they are generally conducive to health, they are always important. To the regulation of diet I attach much importance, more than to the administration of drugs. Patients lying in bed after operations do not seem to me to require to be largely fed; waste does not go on to the same extent as when they are engaged in the business of life; and by the amputation a part of what the food had to maintain has been taken away. Meat and stimulants together are not, in my opinion, necessary except in moderate quantities. The rule I would lay down is that when the patients can take meat, stimulants should be always sparingly used and often withheld, unless, indeed, there be a clear indication for their administration. Hospital patients ordinarily use stimulants as occasional luxuries, not as a common article of diet; yet it is not easy to oppose the inclination for stimulants which such persons manifest when admitted into a hospital; they are best pleased when the dietary is liberal in beer, wine, or spirits. It is when food cannot be taken that stimulants give an important help towards sustaining the patient. Looking back to the cases detailed, you will see that it was not those who took food best that remained free from pyæmia and did the best in the end."

ART. 81.—*On the Use of Bromine in Hospital Erysipelas, &c.*

By Dr. J. H. BRINTON, Surgeon in the United States Army.

(*American Quarterly Journal of Medical Sciences*, July, 1863.)

Dr. Brinton, appointed by the Surgeon-General of the United States Army to investigate the character of hospital gangrene, pyæmia, and erysipelas prevailing in the U. S. hospital at Louisville, and the different modes of treatment there employed for those affections, has made the following interesting report:—

"On my arrival in Louisville, I called on Surgeon M. Goldsmith, U. S. V., the Medical Director of the Louisville Hospitals. In company with him I visited the principal military hospitals in the city and vicinity, and carefully examined the various cases of hospital gangrene and erysipelas therein contained. The type of the former affection at the period of my visit was somewhat similar to that which I had previously observed in U. S. A. General Hospitals at Annapolis, but, although of analogous form, the disease did not appear to me to be of so virulent a grade; whether this was due to the original character of the affection or to the effect of the remedial measures employed, I am not prepared properly to decide. Nearly all the cases observed by me were in the stage of reparation, and but very few in the period of progress. The shape of the ulcers was characteristic, as was also the appearance of the grey slough, but the tendency of the sores to burrow deeply, and to extend rapidly, was not well marked at the time I examined the cases, some thirty in number.

"The treatment almost universally adopted in the Louisville hospitals is that originated and introduced by Surgeon Goldsmith, U. S. V. It consists in the direct local application of bromine, either pure or in solution, to the surfaces of the sloughing sore. Due care is always taken first to remove as thoroughly as possible the sloughs, so that the agent may act on the living tissues, and permeate them to some extent. In cases in which the burrowing is so extensive and deep-seated as to render the application of bromine difficult or incomplete, Dr. Goldsmith resorts to hypodermic injections of bromine at the circumference of the sore. The punctures with the point of the syringe are made at intervals of from one-half to three-fourths of an inch, and one drop of pure bromine is thrown into the tissues at each application. The mode of dressing the surface of the sores with bromine was exhibited to me by Dr. Goldsmith. From my observation of the immediate effect of the reagent upon the diseased tissues, and of the conditions of the sores upon which it had been previously applied, I am inclined to look upon the remedy as one of great value, and well deserving of a fair and extended trial.

"Surgeon Goldsmith declared to me that in forty-eight hours the specific character of any sore, the result of hospital gangrene, can be destroyed by a thorough use of the bromine. The arrest of the virulent process is at once evinced by the absence of the peculiar odour, and by the marked change for the better which immediately ensues in the constitutional symptoms.

"From conversation with Surgeon Goldsmith I inferred that he regarded hospital gangrene as essentially a local affection, and that as soon as a decided local impression is produced upon the sore all danger to life is averted.

"The whole number of cases of hospital gangrene treated in the Louisville hospitals up to this time amounts to eighty-eight. But two deaths have occurred, and in these instances the disease was complicated with a very extensive inflammation of the cellular tissue.

"I would remark that in the Louisville hospitals but little tendency has been observed in the disease to spread from bed to bed, although isolation of the gangrenous patients has not been enforced. In my own judgment the absence of this tendency to infection tells strongly against the supposed virulence of the affection, and should even throw doubts on its true nature, at all events in some instances. Assuming the disease, however, to be the veritable hospital gangrene, the facts connected with its origin were peculiar. The disease occurred almost always in patients who had been wounded at the battle of Murfreesboro', and who had been retained in crowded hospitals for some time previous to their transportation to Louisville. I am informed by Surgeon Thurston, U. S. V., Medical Director of the Nashville hospitals, that no one upon whom the gangrene had already appeared was ever sent from Nashville, and yet many were so infected when admitted to the Louisville hospitals. The development of this disease on the route seems to have been owing to the fact that the transportation of the wounded was effected by means of crowded and ill-ventilated boats, and that the trip by the Cumberland and Ohio Rivers frequently occupied several days. During this time these patients, who had already undergone much suffering, were exposed to all the influences most apt to engender this disease. In contrast with this fact it was found that, as soon as the Louisville and Nashville Railroad was opened, so that the wounded could be conveyed from city to city in one day, all importation of gangrenous sores into Louisville ceased. The development of hospital gangrene during the boat transportation is a noticeable fact, and is strikingly analogous with the same phenomena observed among our paroled wounded prisoners from Richmond, received into the Annapolis General Hospital some months since.

"*Erysipelas.*—Two hospitals are especially set apart for this disease in Louisville (Nos. 19 and 20), both at some distance from the city, and originally country residences. These buildings are located on rising grounds, are well ventilated, and are tolerably well suited for their present purposes. All cases of erysipelas occurring in the city are at once sent thither, and strict isolation is enforced.

"The whole number of cases of erysipelas treated at Louisville was 228; of these 97 were treated in Hospital No. 19, 100 in Hospital No. 20, and 31 cases in Hospitals Nos. 4, 8, and 10. Out of the whole number 51 died, and 177 recovered.

"*Treatment.*—In the application of bromine to the treatment of erysipelas, two different methods were employed: first, by the action of the vapour of bromine in the affected part; second, by a direct application to the erysipelatous surfaces of a solution of bromine of varying strength. In the first method the part affected was enveloped in a dry lint, a cloth saturated with pure bromine was then applied over this, and the whole dressing covered with a piece of oiled skin. The only objection to this treatment was the tendency of the bromine to blister the skin by soaking through the intervening layer of the lint. The other mode of using the bromine is to apply directly to the inflamed integuments a solution of the bromine and

bromide of potassium, of the strength of from fifteen to forty drops of the former to an ounce of water. An ample opportunity was afforded me to observe the results of this treatment in the disease in question, and I have no hesitation in pronouncing it one which, so far as I have seen, is of the greatest value.

"Having finished my observations of erysipelas and hospital gangrene in Louisville, I proceeded to Nashville, and placed myself in communication with Surgeon Thurston, U S .V., Medical Director of Hospitals in that city. With him I visited all of the principal hospitals, and among others the one appropriated to the reception of cases of erysipelas and hospital gangrene. I learned that the reports as to these diseases in Nashville had been much exaggerated. The whole number of cases of gangrene which had occurred since the battle of Murfreesboro' had not exceeded 20, and of these but 6 remained, all in progress of recovery.

"The treatment followed in the Nashville hospitals consisted of applications of bromine, and the use of nitric acid in the ordinary manner. Dr. Thurston informed me that the latter treatment was preferred, and had, he thought, yielded the most successful results. It did not seem to me, however, that the bromine treatment, as practised in Nashville, was as thorough and effective as that pursued under the immediate supervision of Dr. Goldsmith.

"*Erysipelas in Nashville.*—The number of cases of erysipelas following the battle of Murfreesboro' averaged about 60 until recently. At the time of visit that number had fallen to twenty, and all were tending towards recovery. All cases of disease were isolated on their first appearance in a hospital set apart for the purpose, under the charge of Assistant-surgeon Brown, U. S. A. This building was clean, well ventilated, and well managed. At the first out-break of the affection several deaths had occurred in patients severely wounded.

"I was informed by the Medical Director that at present the disease was tractable and yielded readily to the therapeutic measures.

"The treatment found most efficient, and which was almost universally adopted, was the local use of the bromine as already described; for constitutional remedies dependence was placed on iron, bark, tonics, full diet, &c.

"Leaving Nashville, I proceeded to Murfreesboro'. The hospital gangrene, which at one time had been there rife and destructive, had almost disappeared; but few cases remained, and were convalescent.

"The bromine treatment had been freely employed, but with varying results. I observed that its strongest advocates were those medical officers who had been previously stationed in Louisville, and who had been instructed in its use by Surgeon Goldsmith.

"In conclusion, from a careful investigation of the cases in hospital at the time of my visit to the cities above mentioned I would remark:—

"1st.—That the external employment of bromine in the treatment of hospital gangrene has been attended in Louisville with the most marked and beneficent results.

"2nd.—That I have not observed that any injurious consequences whatever have resulted from its application, but the contrary.

"3rd.—That all the medical officers with whom I have conversed in Louisville, Nashville, and Murfreesboro', unite in testimony as to the valuable therapeutic powers of bromine in the treatment of erysipelas; my own observation fully confirms their views.

"4th.—That as a disinfectant the use of bromine in hospital wards, and especially in hospitals intended for the reception of infectious disease, is to be recommended, and is eminently deserving of further trial.

"It will be observed that in the above report I have not alluded to the subject of pyæmia. In explanation I will state that I did not meet the disease in any of the hospitals I visited. I was informed that the pyæmic affection had not existed to any great extent; at all events, to an extent unduly proportioned to the number and gravity of the wounds following the Murfreesboro' battle. Full reports, however, of the affection, as it did prevail, are in process of preparation, and will be submitted to you when received."

ART. 85.—*On Periostitis and Osteomyelitis.*

By M. ROSEN.

(*L'Union Méd.*; and *Medico-Chirurgical Review*, October, 1863.)

With the disease termed periostitis, osteomyelitis almost constantly exists. The inflammatory exudation into the medullary cavity gives rise to the remarkable result of forcing out the medulla through the pores of the bone, so that fluid fat, often in large quantity, is found behind the periosteum. As this fact has been doubted by Demme and others, the author adduces the following proofs of its reality: 1. In a series of cases he has convinced himself by direct clinical observation, having found in recent periosteal abscesses drops of fat behind the periosteum. 2. In a patient, the subject of acute periostitis, and carried off during the first stage of inflammation of the brain, fat was found a line in thickness between the bone and the periosteum. 3. In the year 1854, Dr. Andrea performed the following experiment, which is related in his thesis *De Periostitide*. A piece of fresh tibia was laid in warm water for half an hour, in order that the fat might be rendered fluid. The diaphysis was sawn across at the upper part, and from its lower part a portion of the periosteum was removed. A rod, which did not entirely fill it (so that too great pressure might not be exerted), was passed into the medullary canal. Whenever strong and rapid pressure was induced by means of this rod, a flow of fat took place from the Haversian canals; and when the pressure was but slow and gentle, the fat issued slowly, drop by drop. The experiment repeated with the other tibia furnished the same results. From these considerations the author is of opinion that many examples of inflammation and separation of the periosteum are only secondary to myelitis. Cases are met with in which myelitis has evidently preceded, and periostitis, situated higher up the bone, has followed.

ART. 86.—*On Tumours in Voluntary Muscles, with an Analysis of Sixty-two Cases, and remarks on Treatment.*

By Mr. TEEVAN, Surgeon to the West London Hospital, &c.

(*Medico-Chirurgical Review*, October, 1863.)

Mr. Teevan has expended a good deal of labour upon this paper, and the result is an addition to our knowledge where information was decidedly wanting. He says :—

“ It will thus be seen that out of 62 cases the relative numbers of each growth were—cancerous, 21 ; fibrous, alone and in combination, 16 ; cystic, 8 ; hydatid, 5 ; erectile, 5 ; osseous and osteoid, 3 ; doubtful nature, 3 ; myeloid, 1. The cancerous tumours were the most numerous, being rather more than one-third of the whole ; but, from an examination of the other cases that I have excluded, I am convinced that their proportion is very much greater than this. It would also appear that the tumours affected the muscles of the lower extremity almost as often as they do those of the upper limb ; but with this difference, that in the latter they are almost entirely confined to the pectoralis major, deltoid, and biceps, whereas in the former they are very equally distributed. The muscles of the trunk, and head, and neck were rarely the seat of tumours, with the exception of the rectus abdominalis, which would appear very subject to them.”

Speaking of the treatment of cancer in muscle, Mr. Teevan says :—

“ Whenever practicable, a cancerous tumour in a muscle should not only be excised, but the muscle in which it originated ought to be cut out from its origin to its insertion. But if the cancer be of large size, or if the skin be affected, or if the wound resulting from the excision of the muscle would be of great extent, then the limb ought to be amputated, and the remainder of the muscle in the stump excised.

“ I have thus ventured to propose an operation which is founded on definite principles, is supported by analogy, and is in unison with the views of some of the most original thinkers of our time.”

ART. 87.—*On the Danger of Temporizing too much with Encysted Tumours.*

By M. FLEURY.

(*Gaz. Méd. de Paris*, No. 16 and 17, 1863.)

M. Fleury, surgeon of the Hotel Dieu at Clermont, in this paper observes that these tumours are generally regarded as slight affections, and, as they frequently for years long occasion little inconvenience, patients feel indisposed to undergo the pain of their removal. Many practitioners also advise expectation, while others still have faith in topical applications or absorbent medicines. If the progress of such tumours were always gradual and progressive,

expectation might indeed be advised until a given moment, but, unfortunately, this is not always the case. Thus a tumour which has remained stationary for years will sometimes in a few weeks, or even a few days, double or triple its size; while in another case it may undergo a degeneration leading to a general infection of the economy. Such conversions into cancerous tissue are, however, rare, and the author has only met with one example, and in this case the patient died before there was time for the general system to become affected. In some cases, the changes which the internal membrane of the cyst may undergo have been confounded with cancerous alteration. In some tumours the membrane will remain as thin as paper, while in others it acquires enormous thickness. Some of the tumours dilate at the same time that their walls augment in density; and such are the most dangerous for treatment, as large surfaces have to be exposed, leading to severe inflammation, not unfrequently ending in gangrene. Sometimes, after acquiring a large size, the tumour spontaneously bursts, and secondary cysts form around the aperture which has given issue to the liquid contents.

The wisest course is not to wait too long, and to caution patients as to the possible consequences of too long temporization. The accidents are of two kinds. The modifications which the membrane of the cyst may undergo have their perils; but those accruing from the great increase of its cavity are still greater. The larger tumours are not always those which are most prone to undergo these transformations. Patients not unfrequently present themselves with cysts situated on the knee, which, after existing for years without attaining a large size, burst externally without obvious cause, and project a soft, reddish mass, offering some analogy to softened encephaloid, and soon furnishing an enfeebling arterial haemorrhage. On cutting into such a tumour, a fleshy membrane is found, formed by a velvety, fungoid tissue, whence the slightest pressure causes an abundant escape of blood. Touching this membrane with charpie imbibed in perchloride of iron, or its removal with the bistoury, induces the cessation of this bloody oozing. Its non-malignant nature is proved by the fact that there is no tendency to reproduction. Cysts are sometimes met with, distended with fibrinous coagula, presenting great analogy with those found in aneurisms; and arterial blood escapes with great facility after operations upon cystic goitres. This blood is due to the presence of a spongy tissue, which is not found exclusively in cystic goitre, but also in cystic tumours of other tissues of a less vascular structure.

Not only is there danger produced by delay in the case of cystic tumours from the production of this vascular texture, but also from the supervention of severe inflammation after operation, having a great tendency to terminate in gangrene or give rise to purulent infection. The author has operated many times in these cases, and the mode which he has found most successful has been to divide the tumour along its mesian line, not meddling with the membrane of the cyst if very thin, but excising it when much thickened. He then induces inflammation by filling the cavity which contained the

fluid with dry charpie. At the end of four or five days the innermost layers have become dead and exfoliate, leaving behind a granulated membrane, which forms the point of departure in the formation of a healthy cicatrix. The edges of the wound are then brought together by strapping. Under any mode of operation, however, a fatal issue in advanced cases is not rare; and M. Fleury concludes his paper by again pointing out the necessity of removing these tumours at an earlier period of their appearance.

ART. 88.—*On the Importance of Tapping Joints Distended with Fluid.*

By Prof. INZANI, of Parma.

(*Dublin Medical Press*, May 27, 1863.)

A paper on this subject, in *Omodei's Annali*, begins by asserting the perfect harmlessness of puncturing a distended joint, even during the progress of acute inflammation. The fear of bad consequences following from the wound of the tendinous structures is a mere imagination of the ancients; nor does the air ever appear to make its entrance. The puncture may be made with a trocar or a lancet, the latter being preferable for superficial joints. The author has operated very frequently on the knee, several times on the elbow, occasionally on the carpus and ankle, and once only on the hip; no bad consequences ever following. Pressure by means of a starched bandage should be made, and when the synovial sac refills, it should be again punctured before the distension has advanced too far. In this way a radical cure may be obtained. Examples are given in which large joints, principally the knee, were opened for effusions of blood, of serum in acute inflammation, of serum in chronic inflammation, and of pus—usually with a successful result. But paracentesis should be avoided where the skin is much thinned, and ulceration seems pending. In the synovial bursæ, paracentesis has given equally good results. The examples which are given are those of effusion in the sheaths of tendons after accident (as the peronei in sprains of the foot, the extensors of the thumb in falls on the hand), in which a puncture will give exit to synovial fluid mixed with blood, with much relief to the pain and abbreviation to the course of the disease. The author believes that by these punctures chronic synovitis may often be arrested in cases which, treated by ordinary methods, would end in "white swelling," and that in dropsy of the joint the treatment by repeated puncture and pressure is as effectual and more safe than by injections.

ART. 89.—*On the Efficacy of Villate's Lotion for the Cure of Caries and Sinus.*

By M. NOTTA, Surgeon to the Lisieux Hospital.

(*L'Union Médicale*; and *Journ. de Méd. et Chir. Prat.*, Juillet, 1863.)

M. Notta relates several cases of caries in which great benefit was experienced by injections performed with the mixture known to veterinary surgeons as Villate's lotion. Its composition is as follows:—

R. Liq. plumbi acetatis, $\frac{3}{4}$ j.;
Cupris sulphatis cryst., }
Zinci sulphatis cryst., } $\frac{3}{4}$ ss.,
Aceti, $\frac{3}{4}$ vij.

The salts are dissolved in vinegar, and the acetate of lead poured slowly into the solution. The result is the formation of acetates of zinc and copper, and of a precipitate of sulphate of lead. Vinegar and sulphates of zinc and copper remain in excess. An exploring trocar is in the first place inserted as deeply as possible into the tract, and the fluid, previously shaken, is injected. Considerable pain follows the operation, and inflammation and copious suppuration are induced, which require the application of poultices. In a case of caries of a rib of twelve months' duration, M. Notta performed an injection every morning for a week; no further treatment was required, and a complete cure followed in the space of twenty days. In another instance of the same kind twenty-four injections and four months and a half were necessary to effect a cure. But the patient was affected with tuberculosis, a circumstance which, in M. Notta's opinion, affords additional evidence of the efficacy of Villate's fluid. M. Boinet says that caries of a rib has never yet yielded to iodine injections. In cases of this kind therefore, and in diseases of the bones of the metatarsus or phalanges, with abscesses and sinuses, surgeons are fully justified in following M. Notta's example.

ART. 90.—*On the Efficacy of Artificial and Mineral Tar in the Treatment of Diphtheria, Ulcers, and Cutaneous Affections.*

By M. BOUCHUT.

(*Dublin Medical Press*, July, 1863.)

Of late, M. Bouchut has been in the habit of prescribing mineral and vegetable tar in unhealthy ulcers, cutaneous diseases, and diphtheria in children. In twelve cases observed at the Hospital of the Rue de Sevres, *herpes circinatus* of the scalp, a highly contagious disease, was cured in eight or ten days by the application, morning and evening, to the patches of eruption of the following solutions:—
R. Picis liquidæ, $\frac{3}{4}$ j.; aquæ, $\frac{3}{4}$ iv. R. Picis liquidæ, $\frac{3}{4}$ j.; aquæ, $\frac{3}{4}$ iv. M. The weaker solution was first used, and subsequently the strongest. Coal-tar and wood-tar, the action of which is the same,

have yielded very satisfactory results in pityriasis of the scalp, in eczema impetiginodes of the face, and in common ringworm. *Tinea favosa*, although not removed by the application of tar, is improved by this treatment, and the sporules are thus prevented from flying about and propagating the disease—a consideration of some importance in hospital wards.

M. Bouchut in these various cases employed different preparations. In some cases he has recourse to a mixture of glycerine and starch:— Rx Glycerine, $\frac{3}{j}$.; amyli, $\frac{3}{j}$.; picis purif. $\frac{3}{s}\cdot\frac{3}{j}$. In other instances he substituted lard for glycerine. The selection of the preparation varying according to the requirements of each case. In unhealthy phagedenic sores coal-tar is most serviceable; and M. Bouchut has tested the effects of the remedy in diphtheria. A little girl was admitted into the wards for diphtheritic sore throat; the tonsils were touched night and morning with a brush dipped into the following solution:— Rx Picis liq., $\frac{3}{j}$.; aquæ, $\frac{3}{ij}$.

In the course of twenty-four hours the patches disappeared. Without drawing from a single case any absolute inference as to the efficacy of the application, it is plain, that this result is of an encouraging nature. Moreover, in cutaneous diphtheria, in which no doubt can be entertained as to the true nature of the disease, the good effects of coal-tar are remarkable. In the same ward as the patient just alluded to, was noticed a little girl who had undergone tracheotomy for the treatment of croup. False membranes were rejected; others formed on the surface of the wound, and an eczematous eruption which existed behind the ears became covered with a pseudo-membranous secretion. Wood-tar was also resorted to locally in this case, and in a few days a perfect cure was effected.

ART. 91.—Certain Consequences of the Bite of a Viper reappearing periodically for Thirty-nine Years.

By M. DEMEURET.

(*Gaz. Hebdom. de Méd. et Chir.*, November 6, 1863.)

CASE.—The patient, is a woman, about 65 years of age, well formed and nourished, the wife of a peasant in a healthy part of the country. On the 25th of May, 1824, while in a wood, she was bitten by a viper on the inside of the fore-arm, near the wrist. Immediately afterwards the arm became swollen, red, livid, almost purple; and with these local symptoms were extreme anxiety, headache, vomiting, and shiverings. In the course of a few hours a large bulla, with a dull-red base, had developed itself over the wound. Afterwards (the time is not mentioned), bullæ of the same description made their appearance all over the body, even on the face, the intermediate space being red and swollen. When ruptured, a very large quantity of turbid serum escaped. This eruption continued from 28th May, 1824, to Nov. 1825. On the 28th May, 1826, the same phenomena reappeared; the eruption beginning at the seat of the bite, and continuing until November of the same year. And every year, from 1826 to 1863, the history of the patient has been the same—the symptoms beginning in the month of May with lassitude, anxiety, nausea, headache, &c.: then, after six or

eight days of these introductory troubles, the cicatrix becoming red and painful; then tingling and swelling of the arm; then the development of bullæ exactly as in 1824, the only difference being that the eruption disappears in five or six weeks, instead of continuing for five or six months as at first. In the interval the patient is apparently quite well, and a white faint cicatrix is the only visible remains of her troubles.

Before the accident, M. Demeuret tells us, the patient had never suffered from any cutaneous affection, not even the mildest.

ART. 92.—*New Instruments for Discovering the Presence of a Ball or other Metallic Body within a Wound—viz., Nélaton's Porcelain Probe, and Favre's Galvanic Probe.*

By Mr. —.

(*Medical Times and Gazette*, December 13, 1862.)

The difficulties which have attended the diagnosis of General Garibaldi's wound, and the contradictions of surgical opinion, have had the good effect of stimulating ingenuity for the devising of new and more certain methods of physical exploration. It will be recollect ed that the positive opinion of the presence of the ball in Garibaldi's wound given by M. Nélaton was based upon the dull character of the sound elicited when the probe struck against the hard substance at the bottom, which was very different in his experience from the clear sound elicited from a piece of necrosed bone under similar circumstances, and also upon the sensation imparted to the hand, which bore no resemblance to that imparted by the rough surface of a carious bone. On his return to Paris, he devised, in conjunction with M. Em. Rousseau, a contrivance by which a portion of the ball might actually be brought away, so as to convince those who differed from him in opinion. This instrument consisted of a probe, furnished at the extremity with a little sphere of unglazed porcelain or biscuit-ware, about the size of a small pea. On bringing this sphere in contact with a leaden ball, and exercising a little rotatory friction, it acquires a stain of the metal, which subsequent contact of the soft parts and morbid secretions fails to remove. There is this additional advantage, that the portion of metal thus removed may be dissolved off, and made the subject of chemical tests. It was by the use of this little instrument that Dr. Zanetti convinced himself of the presence of the ball with sufficient certainty to lead to a determination to extract it. The credit of another contrivance, more complicated but not less ingenious, is due to the fertile brain of M. Favre, Professor of Chemistry to the Faculty of Sciences of Marseilles. The principle involved is the different conducting power for electricity between a metallic substance, on the one hand, and the fluids and tissues of the body, on the other. Thus it happens, that if the conducting wire of a feeble galvanic circuit connected with a galvanometer be broken, and a bullet or other metallic body be interposed, on the completion of the circuit the needle will be strongly deflected. This would not be the case on interposing the ordinary tissues of the body. With the assistance

of M. Favre, Dr. Fontan, a military surgeon at Marseilles, has made experiments to test the efficiency of the plan proposed by the former. The apparatus used was as follows: 1. A Smee's battery of a single pair of plates, so feeble as to be unable to produce any sensible amount of electrolysis with the animal tissues. 2. A galvanometer. 3. A probe, consisting of two parts, one of which is received into the other, which forms thus an outer casing. The internal portion, or galvanic portion, is a straight metallic probe, through the length of which pass, packed in silk, two metallic wires, each terminating in a steel needle, and isolated and firmly fixed beyond the extremity of the probe by means of a little cone of ivory. These wires are intended to conduct the galvanic current, the galvanometer being placed in the course of the intended circuit. For this inner probe, there is provided an external metallic casing, so constructed as to permit the galvanic probe to be slid within it, and perforated at its extremity with two holes, through which the needle-points of the conducting wires can be protruded. There are various little arrangements of grooves, slits, and a screw to insure accuracy of adaptation between the galvanic probe and its case. In using the instrument, the internal probe is retracted and fixed by the little screw, and the instrument is then employed in the ordinary way as a probe. On the solid substance being arrived at, the screw is loosened, the needle-points protruded, and brought into contact with it, by sliding down the internal probe. If the substance be metallic the circuit is established, and the galvanometer deflected. The first experiments were made with wires unprovided with needle-points, the addition of which were found essential to success, inasmuch as they readily penetrated any soft tissues or adventitious substances, pieces of clothing, leather, &c., which might chance to be interposed and also overcame the difficulty likely to result from oxidation of the surface of the metallic substance, &c. The use of a little friction with the point of the sound, or a gentle percussion upon it, never failed to establish the galvanic current. M. Fontan suggests that, by modification of this probe, the principle involved might be applied to other purposes of diagnosis, as where the presence of metallic bodies in the canals or mucous cavities of the body was to be detected.

ART. 93.—*A Case of Traumatic Tetanus in which a Nerve was Divided with seemingly Satisfactory Results.*

By Dr. FAYRER, of Calcutta.

(*Indian Annals of Medical Science*, No. xvi., 1863.)

CASE.—A young Brahmin, aged 22, was admitted into the Calcutta Hospital on Nov. 3rd. A week previously, he ran some splinters of bamboo into the left hand at the root of the thumb; they broke off, and remained lodged in the hand just by the ball of the thumb. Suppuration followed, and was attended with much pain. The patient, during the three days before admission, had been able to close the fingers of the injured hand,

but when he opened them they became spasmically contracted and twisted; the thumb and the three fingers supplied by the median nerve were implicated. He had no spasm of the arm, but pain in the left shoulder, and partial closure of the mouth, which could be opened sufficiently to introduce the handle of a table-knife. He was in good spirits, and seemed to have had good health before the accident. Dr. Fayerer made an incision into the palm of the hand, and removed a splinter an inch in length. An enema of castor-oil and turpentine was ordered; also two grains of opium, to be taken immediately. The next day, the spasms continued in the hand, and he had frequent spasms in the back, and some rigidity of the jaw. The slightest touch produced spasm of the arm, back, and jaw. He was ordered to have tincture of Indian hemp and chloroform; enemata of oil and turpentine; opiate poultices to the wound; and, as diet, milk and sago, or whatever he would eat.

Dr. Fayerer removed another small splinter. As the splinters were impacted just where the median nerve divides into its digital branches, the patient was put under the influence of chloroform, and Dr. Fayerer divided the median nerve just above the annular ligament. Very little effect was produced at the time. Six hours afterwards, he said that the fingers were somewhat benumbed; that he had pain in the hand and arm; but that the contractions of the arm were much less frequent and violent.

On the following day (Nov. 5th), there was no rigidity in the neck and jaws. The spasms in the arm and hand continued, but were less violent and persistent. The Indian hemp, opium, and chloroform, were continued up to Nov. 9th. On Nov. 12th, matter having formed in the hand, incisions were made and another splinter was removed. The spasms had ceased, but the fingers continued bent into the palm, though less rigidly than before. The hand remained for some time contracted, long after spasm had ceased. When he left the hospital on Nov. 28th, he could with slight effort straighten the fingers, and was regaining the use of them.

Dr. Fayerer believes that the arrest of the tetanic symptoms was due rather to the division of the nerve than to the internal remedies which were employed. The operation was done soon after the tetanic symptoms set in.

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 94.—*On Iridectomy in Destructive Ulceration of the Cornea.*

By Mr. R. BRUDENELL CARTER, of Stroud.

(*Medical Times and Gazette*, May 16, 1863.)

The value of iridectomy in destructive ulceration of the cornea, although long since established by Von Graefe, and fully recognised on the Continent, has not, Mr. Carter thinks, in this country, received the attention that is its due. The operation is certainly not performed often enough by surgeons in general practice, and, even in some ophthalmic hospitals, it does not hold the position to which it is entitled. The following case affords an illustration of its advantages:—

CASE.—G. R., a farm labourer, aged 53, applied to me on Feb. 5th, on account of an injury to his right eye. He is a feeble, decrepit-looking man,

grey, and partially bald, who might pass for ten or fifteen years more than the age he acknowledges.

On Jan. 28th (eight days previously) he received a blow on the eye from a twig. With the apathy characteristic of his class, he continued to work, in spite of loss of vision and increasing pain, until his employer sent him to seek assistance.

I found the conjunctiva of the right eye so much injected, that a pterygium of long standing on the nasal side, could scarcely be distinguished from the surrounding vascularity. The cornea was nearly perforated by a grey, sloughing ulcer, about three lines in diameter, surrounded by a zone of dense opacity. The ulcer not being perfectly concentric with cornea, but situated somewhat towards its outer and lower margin, the zone of opacity reached the margin in this direction; while, on the upper and inner side, above the pupil, it left a crescentic portion, which, although steamy and turbid, retained sufficient transparency to show the dark brown colour of the iris, but not to show its fibrous structure. There were no vessels proceeding to the ulcer, nor (except at the pterygium) encroaching upon any part of the corneal margin. Vision was limited to a dim quantitative perception of light, the patient perceiving the direction of the window, but not its outline, nor its sash-bars. There was severe pain, with nocturnal exacerbation, a feeble, quick pulse, and a worn, suffering aspect. The tension of the globe was not at all, or only very slightly, increased, and was certainly not greater than in the left eye, which, however, was already showing traces of sympathetic irritation. The injured organ had been covered by a folded handkerchief, but not treated in any way whatever.

Prior to experience of the good effects of iridectomy, it would have appeared to me certain, under the conditions I have described, that the impending perforation would be followed by iritis, probably passing on to complete disorganization of the eye, and involving great likelihood of sympathetic destruction of its fellow.

I placed the patient upon a couch, and made an immediate iridectomy, removing the superior sixth of the iris. The pain of the operation was very acute; and, after applying Arlt's compress, I directed the patient to wait until the pain subsided. It was my intention to see him again, to prescribe an active tonic and sedative treatment, and to give him some general directions. As soon, however, as he became somewhat more easy, he left the house without my knowledge, and did not return until the following Sunday, the 8th of February. He then stated that all pain had ceased three hours after the operation, that he went back to work in the afternoon, and that he had deferred visiting me until Sunday, in order not to lose time. The compress had remained undisturbed, and, on removing it, I found the conjunctival injection much diminished, the section healed, the turbid crescentic portion of cornea cleared, the zone of opacity narrower and less dense, the ulcer receiving red vessels from below, and nearly filled up by plastic lymph. Perception of light had become qualitative, the patient being able to see a sheet of white paper.

As the case had done so well without medication, I re-applied the compress, and sent the man back to his work. On the 11th, the improvement being confirmed, and the patient able to count fingers, the compress was left off, and a band substituted for it. On the 22nd, there remained very little conjunctival injection, the vessels that repaired the ulcer had dwindled away; the place of actual excavation was marked by a well-defined dense cicatrix, its upper border just reaching to the centre of the natural pupil, and the rest of the cornea had regained perfect transparency. The patient could read No. 16 of Jäger's test-types without assistance, or No. 14 by the aid

of a ten-inch bi-convex lens, and I found that he could do very little more with the uninjured eye. Such a degree of amblyopia is not uncommon among elderly agricultural labourers, who, even when able to decipher simple words, never read, and who have never been accustomed to exercise their eyes about small objects of any kind. Their wives are preserved from a similar condition by using their eyes about needlework.

The patient was directed to discard all coverings from the eye, and to apply a mild astringent lotion (arg. nit., gr. ij., ad. $\frac{3}{j}$) for the removal of the remaining conjunctival vascularity.

"This case," says Mr. Carter, "is only singular from the absence, at first accidental, of medical treatment; and, this feature excepted, my note-book would furnish several of similar import. In all of them, however, iridectomy was followed by the administration of quinine, or bark, and ammonia, with or without opium, and by the local application of atropine and poultices, so that I was unable to determine the precise curative influence of the operation itself. Still, the operation has been the turning-point of every case, and the invariable precursor of rapid recovery. Before I practised it, I used to see occasional destruction of the cornea; but such a result has never followed its performance."

"It must be confessed, I think, that we do not understand the *modus operandi* of iridectomy. In these corneal cases there is seldom increased tension, and there can hardly be (as suggested by Dr. Moore, in iritis) any retention of morbid matters behind the iris. A very complete division of the radiating fibres of the ciliary muscle is effected when the section for iridectomy is properly made—that is, when it is sufficiently far back, although the circular fibres are left intact. Is it possible that this division may produce a salutary change in the ocular circulation? The surgeons who practise division of the ciliary muscle by puncture seem to think that their procedure exerts some such influence. I tried it in a case of irido-choroiditis with marked, but very temporary benefit, and its repetition was not only useless, but a source of irritation. Shortly afterwards, I saw a patient in whom division of the ciliary muscle, by another surgeon, had been followed by extensive detachment of the retina—a result that the operation is obviously well calculated to produce. It is easy to conceive that the point or edge of the knife may itself detach and push inwards the retina in some cases, and that in others haemorrhage or effusion under the choroid may produce the same effect. Since then I have entirely abandoned the operation, believing it to be, at the best, a very uncertain and imperfect substitute for iridectomy, and to be beset with many disadvantages and dangers from which iridectomy is wholly free."

"The method of performing iridectomy is worthy of a passing notice. Mr. Bowman has sanctioned, by the great weight of his precept and example, such a rapid withdrawal of the knife as may produce a gush of aqueous humour, and a probable prolapse of the iris. Mr. Ernest Hart has recently advocated the same way of withdrawing the cutting-needle after the smaller incision required for artificial pupil. There is, however, among many operators of large experience a growing opinion that this gush of aqueous

humour, and this prolapse of the iris, by the sudden shock to, and displacement of, the lens that they produce, are fertile sources of cataract after the operation, even where the anterior capsule has remained perfectly intact. Until this opinion be disproved, it will be safest to withdraw the knife with extreme caution, and to seize the iris by the introduction of proper forceps within the anterior chamber. This manœuvre is, to say the least, perfectly unobjectionable; it avoids a risk that may be actual, and that we cannot at present call chimerical, and it is perhaps more surgical than the more hurried and less careful method of procedure."

ART. 95.—*Clinical Data respecting Amaurosis, more especially respecting that form of it supposed to be Induced by Tobacco.*

By Mr. JONATHAN HUTCHINSON, Surgeon to the London Hospital, Assistant-Surgeon to the Royal London Ophthalmic Hospital, &c.

(*Medical Circular*, November 11, 1863.)

Mr. Hutchinson has collected together all the cases of true cerebral amaurosis of which he has taken notes during the past four years. These cases, which are 65 in number, are arranged in three groups:—First, cases in which both eyes are affected and the patients are adults (47); secondly, cases in which both eyes are affected and the patients are children (11); and, thirdly, cases of amaurosis of only one eye (7). The subjoined table will show the relative proportion of the two sexes in each group:—

Series I.—Symmetrical, and in Adults:	Males.	Females.
Cerebral amaurosis, uncomplicated (idiopathic)	37 . . .	3
Ditto, probably complicated or secondary	3 . . .	4
Series II.—Symmetrical, and in Children:		
Cerebral amaurosis, uncomplicated (idiopathic)	3 . . .	7
Ditto, probably complicated or secondary	0 . . .	1
Series III.—Unsymmetrical (all ages)	. . . . .	4

In this table, all the cases in which there is good reason to suspect that the amaurosis was secondary to other disease are considered as complicated; in the others (idiopathic) Mr. Hutchinson has been unable, on careful inquiry, to discover any satisfactory explanation of the disease. It must be noted that a most remarkable difference in the relative proportion of the two sexes existed in the idiopathic class of the first series, and that this discrepancy is not found in the other groups. Mr. Hutchinson then proceeds to inquire as to how this great disproportion (37 men to 3 women) could be explained. The possible influence, 1st, of different occupations; 2nd, of intemperance; 3rd, of sexual irregularities: 4th, of venereal diseases; 5th, of injuries; and lastly, of tobacco, are severally examined. That occupation has not much to do with it seems clear from the fact that the patients had followed most various callings; and as to syphilis

and intemperance, to neither of these is the male sex exposed in sufficiently disproportionate degree to account for the very different numbers. In only 4 of the whole number of cases is there any history of injury to the head; and in 2 only of these could it be reasonably inferred that the injury has been the exciting cause of the disease. There remained then the possible influence of tobacco-smoking and of sexual excesses. The author states strongly his conviction that the real explanation of the majority of cases of this form of amaurosis would be found in one or other of these two. Whether tobacco had any share, or whether all should be attributed to the former, he cannot say. He wishes to abstain for the present from any positive opinion, and simply begs to call attention to the clinical facts. It might possibly prove that, after all, this disproportion in the sexes is a mere coincidence, and that a larger collection of cases would show it to be such.

Amongst the conclusions obtained by analysis of the series of cases, the following are the more important:—In 23 of the 37 cases, it was recorded that the patients had smoked; whilst in 2 it was expressly stated that they had never done so; and in 12 there was no information. In 10 the patients had been intemperate. In only 2 could it be ascertained that the patients had had constitutional syphilis. In 4 instances the sufferers attributed their disease to anxiety. The disease had progressed to absolute blindness in 15 instances; in 5 it appeared to have been arrested; and in most of the others it was either progressive at the last date of notes or the patient had ceased to attend.

With regard to the probability of sexual excesses having anything to do with the causation of the disease in question, the author states that in not a few he has obtained the history of failure of sexual power. He has also found that varicocele was a frequent concomitant of this form of amaurosis. Still, on the other hand, in many instances the patients were healthy, robust men, who ailed nothing whatever excepting the loss of sight. In no single instance in the series was there any strong reason for attributing the disease to masturbation. Even if it were proved that varicocele, wasted testes, and loss of generative function were usual concomitants of this form of amaurosis in the male, still the tobacco hypothesis would not be wholly set aside, since the two classes of symptoms might both be due to one common cause. It was remarkable that in almost all the few cases in which the disease occurred idiopathically in females, there was the history of very decided disturbance of menstruation.

Although he feels that there are great difficulties in the way of belief in the tobacco hypothesis—such, for instance, that many of those affected had smoked only quite moderately; that many had smoked for a long series of years before the amaurosis supervened; that thousands and thousands smoked to great excess without ever suffering from amaurosis; that it was not easy to understand how the tobacco poison could act on one single nervous ganglion alone, the other parts of the nervous system escaping—still the author thinks that there is enough of suspicion in the clinical facts to make

it the duty of ophthalmic surgeons to insist on the disuse of tobacco in all cases in which the premonitory symptoms of this disease were presented. The subject is one well worthy of prolonged investigation, and no doubt it will soon be set at rest one way or the other.

In concluding his paper Mr. Hutchinson mentions the following desiderata :—

1. A much more extended series of cases.
 2. More detailed information as to the use of tobacco by those affected by this form of amaurosis.
 3. Information as to whether there may not be a considerable proportion of men affected by it who have never used tobacco.
 4. Information as to the co-existence or otherwise of varicocele with this form of amaurosis.
 5. Information as to whether it ever occurs in women who have smoked. In some countries where smoking is more common amongst women than it is here, valuable information on this head might be obtained.
 6. Better knowledge as to whether the course of the disease can in any considerable number of cases be suspended—1st, by making the patient give up smoking ; or, 2nd, by regulation of sexual habits.
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ART. 96.—*On Smoking as a Cause of Optic Atrophy, &c.*

By MR. ERNEST HART, Ophthalmic Surgeon to
St. Mary's Hospital, &c.

(*Lancet*, August 1, 1863.)

In a short letter upon this subject, Mr. Hart says :—" Since I have learnt that Mr. Wordsworth was inclined to connect a definite lesion of the eyeball with the habit of smoking, I have given attention to the question. The results at which I have been able to arrive are, however, much opposed to the views which he last week enunciated. I hope that, for the purposes of this inquiry, we may be allowed to discard the term "amaurosis" which has been imported into it. That is a phrase originating in the darker ages of ophthalmic science, and has been well defined as describing a condition in which the patient saw nothing, and the surgeon just as little. It included all those "obscure diseases" of the fundus of the eye in which the existence of disease was inferred from the loss of sight, but was beyond the reach of diagnosis.

" Fortunately the fundus of the eyeball is no longer concealed from inspection, but with the aid of the means which modern physiologists have placed at our disposal we can examine the optic papillæ, the retina, the choroid, and vitreous as readily as the cornea, and can read off their pathological changes. When, therefore, authors speak now of 'tobacco as a cause of amaurosis,' we may expect that they will be good enough to define the form of disease to which they

apply that very indefinite term. Mr. Wordsworth, when speaking of amaurosis as the consequence of smoking, is of opinion that tobacco produces white atrophy of the optic nerve.

"I have been unable to trace the connexion in any case of white atrophy which has come under my notice, and I cannot see that he supplies any satisfactory evidence which can be considered to support that view.

"It will be observed that the tobacco disease of which he speaks in the clinical histories is in no way distinguishable from ordinary white atrophy; it seems, indeed, to be avowedly identical with that condition. Now, in the first place, to those who will think over the pathology of that affection, it will not seem a very probable suggestion that tobacco-smoking should produce this specific degeneration, without first *very seriously* affecting the other parts of the nervous system, on which it undoubtedly acts more powerfully and directly.

"Among the known causes of white atrophy of the optic nerve are, cerebral effusion, tumours of the brain, structural changes of the thalami and corpora strata, &c. In order to ascertain whether tobacco-smoking has any claim to be ranked among the unknown causes, I have been examining with the ophthalmoscope all the inveterate smokers on whom I could lay hands among my patients and in a considerable acquaintance. I have not in any case found the least trace of or tendency to white atrophy. On the other hand, white atrophy is found in children and females as well as in adults and males. Of the six cases which have come under my notice recently, and in which I have investigated the question, not one was a regular or considerable smoker; two did not smoke at all. In a very distressing case of double white atrophy now under my care, in which the disease is gradually approaching its last stage and the sight nearly extinguished, the patient has been a very moderate smoker, only smoking when a friend dropped in. He has not derived any benefit from total abstinence. I invite Mr. Wordsworth to reconsider this question, and I believe that a further review of clinical evidence will lead him to the same conclusion as myself."

ART. 97.—*On a Lesion of the Conjunctiva coinciding with Hemeralopia.*

By M. BITOT.

(*Bull. de l'Acad. de Méd.*, No. 14, 1863; and *Medico-Chirurgical Review*, July, 1863.)

In a recent report on hemeralopia, M. Gosselin noticed the fact of slight blepharitis or conjunctival catarrh being connected with the night-blindness, as assisting to explain its epidemic character, its persistence in the same regiments, and its recurrence in the same men. In the present paper, M. Bitot indicates the coincidence of hemeralopia with a lesion of the conjunctiva, occupying not the lids, but the globe of the eye, and not exhibited by signs of inflammation, but by an assemblage of shining white spots, producing a pearly or silvery spot by the side of the cornea. The author has made his

observations in twenty-nine cases occurring in the Bordeaux Children's Hospital, nineteen being males and ten females; the ages varying from nine to nineteen years, these children being employed as tailors, shoemakers, and dressmakers. The lesion has been always found near the lateral part of the cornea, generally on the external side. The spot, of a pearly or silvery appearance, seems constituted of an aggregate of minute points, and may vary in form not only in different individuals, but in the two eyes of the same person. In general, it is triangular, having its somewhat concave base turned towards the cornea. The form is susceptible of undergoing change when pressure is made on the eyelids, the parts constituting the spot being simply in juxtaposition. The extent of this spot is proportionate to the completeness of the hemeralopia, and at the commencement of the disease only a few pearly points are visible. In some cases these have furnished the first indication of the approaching hemeralopia, the patients not being aware then of any disturbance of their vision. The course of the spot follows that of the hemeralopia, increasing in size as this becomes more complete, and diminishing slowly or rapidly, according to the rapidity of the cure. Not a trace of the spot remains visible when the normal vision has become restored. The existence and duration of the spot thus becomes a measure of the principal disease; but before concluding this to be the case, M. Bitot examined the other children of the establishment, in order to ascertain whether its presence might not be a mere coincidence due to the lymphatic or scrofulous constitution so prevalent there. On examination, however, the subjects of hemeralopia were found to be some of the most healthy children, while cases which exhibited marked scrofula, independently of hemeralopia, never manifested the spots in question. These spots cannot be detached by the finger-nail, but seem to consist of epithelial layers. The conjunctiva situated between them and the external angle of the eye, loses its normal characters. It is less moist, soft, shining, and pliable, and pressure made by means of the eyelids, exhibits a very clear line of demarcation between its changed and healthy portions.

M. Villemain, an army-surgeon, states, without having been aware of M. Bitot's investigations, that he met with this white spot in an epidemic of hemeralopia occurring in a battalion stationed at Strasbourg in 1860.

ART. 98.—*On the Treatment of Strabismus at the Royal Ophthalmic Hospital, Moorfields.*

By Mr. GEORGE LAWSON, Assistant-Surgeon to the Royal London Ophthalmic Hospital, &c.

(*Lancet*, July, 4, 1863.)

It is often stated that some of the objections to the subconjunctival operation are, that the plica semilunaris is interfered with, and that the result is a shrinking and retraction of the caruncle. Again,

it is urged that suppuration and large growths of granulations follow the operation, and add considerably to the after deformity.

"To such statements," says Mr. Lawson, "I can only say that the writer of them either could never have seen the subconjunctival operation properly performed, or else must have witnessed results very different from those which are obtained at Moorfields.

"I would preface the remarks I have to make on this operation by stating that the plica semilunaris ought never to be interfered with; that the falling back of the caruncle is an exceedingly rare occurrence after the operation, and cannot follow it unless improperly performed; and that suppuration of the wound and the after-formation of granulations in the site of the cut in the conjunctiva never occur.

"I will now briefly describe the operation as performed at Moorfields.

"The lids are kept apart by the ordinary wire speculum. The surgeon then makes a small opening in the conjunctiva with scissors over the lower edge of the insertion of the rectus tendon, taking hold of the membrane, and often of the deep fascia at the same time, with the forceps, which, if the eye be turned inwards, may be滑 (closed) along the surface from the edge of the cornea till they reach the proper spot for the opening: thus the eye need not be held by an assistant. The fascia being opened, the lower edge of the tendon is exposed *close to its insertion*. If the fascia has not been opened at the first snip, it is in its turn seized by the forceps at the same point and divided, without interference with any other structure; the object being simply to divide the tendon on the ocular side of the hook *at its insertion*. The blunt hook is now passed through the aperture in the subconjunctival fascia, and behind the tendon, which it renders tense by being made to draw on it slightly forwards and outwards. The next step is the introduction of the scissors. Mr. Bowman insists on the propriety of carefully introducing the points of the scissors, not much separated—one along the hook behind the tendon, the other in front of the tendon, and between it and the conjunctiva, and of dividing the tendon by *successive snips* from the lower to the upper edge. If the tendon is divided by one cut the operation is more roughly executed, for, as the blades have to be opened more widely, the opening in the conjunctiva and fascia must be larger; vessels of a larger size may be divided, and the tendon may be pushed off the hook before the points of the scissors: if this happens, of course the hook must be re-introduced. The surgeon completes the operation by making a small counter-puncture by bulging the conjunctiva on the end of the hook in the situation of the upper border of the tendon after its division, and by then snipping it with the scissors; the object being to allow any of the effused blood immediately to escape, instead of diffusing itself over the sclerotic. The subsequent ecchymosis then never need extend beyond the seat of the operation, and should disappear within a few days.

"The results of this operation, when properly performed, are so satisfactory that I feel any new method must possess very strong claims to justify its preference.

" Before operating on a patient for strabismus, that visual condition of the two eyes is to be ascertained, and the relative strength of the internal and external recti muscles made out. Mr. Bowman is very decided in urging the necessity of carefully estimating the comparative strength of these muscles in both eyes, as according to their relative power he determines upon the necessity of operating on one or both eyes. He has adopted a set of symbols which indicate accurately their comparative state. The patient is made to look at a near object held at the extreme outer limit of his field of vision, first on one side, then on the other, and the extreme limit of movement of each eye inwards and outwards is then noted, with reference respectively to the lower punctum and the outer canthus: the pupil being the part of the eye used to mark the movement inwards; the outer edge of the cornea the movement outwards. In noting the case on paper, the diagrams of the positions of the two eyes should be placed on the same line, as if facing the observer; that of the right eye on the left-hand side. The following may be taken as an example:—



a, b. Right eye.

c, d. Left eye.

- a.* Extreme range outwards; the outer edge of the cornea fails to reach the canthus. *b.* Extreme range inwards; the pupil passes beyond the punctum. *c.* Extreme range inwards; the pupil does not reach the punctum. *d.* Extreme range outwards; the outer edge of the cornea passes beyond the canthus.

" In each case the exact distance admits of being recorded. In this manner the relative strength of the internal and external recti of the two eyes may be estimated, and the result marked down in a single line, so as to show at a glance in which eye the preponderance of power of either muscle exists. After the operation another examination is made, and the result again marked down. We are thus enabled accurately to record on paper the amount of power the one muscle has gained and the loss the other has sustained by the operation, and this at successive periods in the history of each case."

ART. 99.—*Double Vision with each and both Eyes.*

By Dr. BETHUNE.

(*Boston Medical and Surgical Journal*, Feb. 12, 1863.)

CASE.—Mrs. ——, aged 37, the wife of a physician, and who had formerly taught in one of the highest of our private schools, consulted me first on the 10th of March, 1862. Naturally far-sighted, and without previous trouble in the eyes, eighteen months ago, after unusual exertion in studying, she was seized with double vision with each and both eyes. She suffers no pain,

photophobia, or other subjective symptom. This diplopia does not extend to very near objects, the nearest point being from four to five feet. The new moon she describes as seeing with four horns. The false image seems always to the left, except in the case of horizontal lines, as, for instance, a telegraph wire, when it appears below. The appearances are the same with either eye covered. By bending the head, she thinks to the left, the two images coincide. She thinks there has been no variation in the double vision since she first observed it, *when the circumstances are the same*. She observes it more when looking towards the sky, and in clear light, than when the light is weaker.

She is rather a delicate-looking person, though her general health is good. Her hands and feet are apt to be cold. About six months ago she was attacked with tinnitus of both ears, which still continues.

On examination, the only abnormal appearance in the eyes is a little tinea ciliaris. She was advised to rest the eyes, to apply a lotion of acetate of lead to them, and a stimulating lotion to the spine. To take sherry wine, and exercise in the open air up to her strength.

Jan. 17th, 1863.—Was again seen to-day. No change in eyes. Other things as above, except that the tinnitus has diminished. The left pupil was dilated with atropine, and the eye examined with Burow's ophthalmoscope. *Nothing abnormal seen.* Two repetitions of this examination, on different days, were made with the same result.

ART. 100.—*On the Diagnosis and Treatment of Syphilitic Tubercle of the Eyelid.*

By Mr. J. VOSE SOLOMON, Surgeon to the Birmingham and Midland Eye Hospital.

(*British Medical Journal*, April 18, 1863.)

A disease for which the common tarsal tumour—the grando or chalazion of technologists—may be mistaken, is syphilitic tubercle of the lid.

The tarsal border in this affection becomes the seat of a well defined and hard tumour, in the centre and free border of which a yellowish spot is apparent. At this stage, the tubercle bears a rude resemblance to hordeolum or stye.

The yellow spot sooner or later ulcerates; and if the molecular changes be not controlled by mercury, a deep notch is made in the border of the eyelid, and remains as a permanent deformity. The ulcer is at first superficial and of a dusky yellow colour, and the lid-tissue around is widened out by a circumscribed and dense exudation, as in the Hunterian chancre.

CASE 1.—My introduction to this form of syphilis of the lid was made many years ago, in the case of a married lady, who consulted me respecting a tumour such as I have described. One of her eyelids was disfigured by a notch, which she told me marked the site of a tumour similar to the one which now concerned her, and which had run a natural course. The disease was not "tarsal tumour," for this never ulcerates or suppurates at the free margin of the tarsus. The chronicity of the disease and appearance of the yellow spot forbade the idea of its being hordeolum. On calling upon the surgeon who attended the family, I learned from him

that the patient had been infected with syphilis by her husband two years ago, and had been treated for secondary symptoms.

The following case affords a good clinical picture of the early stage of syphilitic tubercle.

CASE 2.—A young woman, aged 20 (married) applied at the Eye Hospital on Oct. 21st, 1856, with a hard tubercle on the edge of the right upper lid close to the outer canthus, and a similar tumour on the corresponding situation of the left lower lid. They were not inflamed; but presented, upon the integument at its line of union with the muco-cutaneous surface of the tarsus, an excoriated ulcer, of small size and oval shape. The ulcer on the right side was covered by a sticky secretion of yellowish colour.

The face of the patient was disfigured by syphilitic papulae.

The velum palati was oedematous, the tonsils foul and deeply ulcerated, and one side of the tongue presented a blanched patch, in the centre of which was an ulcer. Plummer's pill was ordered.

In three days (Oct. 24th), the right lid was much inflamed and swollen. The ulcers had extended; they were oval, and covered by a dirty gray crust (epithelial scales), on the removal of which a tawny surface was exposed.

Treatment was now directed to the relief of the inflammation of the integument; and gray powder in combination with the extract of conium was substituted for the Plummer's pill, which did not appear to agree.

R Hydargyri cum cretā, ext. conii, &a gr. v.

Fiant pilulae ij ter in die sumendæ.

The importance of abstinence from alcoholic stimulants, the necessity of a nutritious diet, and of keeping the body warm, were fully explained to the patient.

My notes for Oct. 28th state:—"There is less inflammation of the lid, the tubercles are smaller and softer, but the ulcers remain unchanged. The woman looks better, and says she feels so."

In six days afterwards (Nov. 3rd), the thirteenth of the treatment, the ulcers had cicatrised, and the surrounding hardness had disappeared. The appetite was good, and the complexion wore the aspect of health. It was a long time, the poor woman said, since she had felt so well as now. She remained under observation for a time, taking small doses of the mercury and iodide of potash. There was no relapse.

For the cure of this disease, all that is needed is a course of mercury adapted to the constitutional power and idiosyncrasy of the patient. The supervention of inflammation is to be met by the application of such remedies as would be appropriate if there were no syphilitic complication.

The inflammation should not be considered as belonging to the venereal complaint, but as an independent disease; hence a leech or two and an evaporating lotion may be necessary in addition to the mercury.

In syphilis of the eyelid I have not been able to satisfy myself of the value of yellow or black wash as a topical application. The occasional touching of the sore with a crayon of nitrate of silver, in combination with nitrate of potash, is useful. A solution of nitrate of silver in distilled water, to which so much glycerine has been added as will give a coating to the ulcer, is a good form of application.

I have encountered a difficulty in the administration of mercury in two cases. Both were females: one was phthisical; the other suffered from tertiary osseous symptoms, and was old and feeble.

Cancer of the eyelid is to be distinguished from syphilitic tubercle by its history, the absence of secondary symptoms; by the accompanying tume-

faction being less, and of a different feel when manipulated; by the inefficiency of mercury; and by the results of a microscopic examination of the diseased structure. I have not laid stress on the generally more advanced age of cancer patients, because I have seen a flat syphilitic tubercle on the integument of the eyelid of a woman who was nearly 60 years of age, and which rapidly disappeared under mercurial treatment; nor upon slight enlargement and tenderness of the preauricular gland, as they are common to syphilis, cancer, and hordeolum.

CASE 3.—A woman, aged 25 years (married to a policeman), of strumous diathesis, complexion rather white, moderately plump, presented herself on March 17th, 1863, with a red swelling of the lid, situated very near to the right tear-sac, and was prescribed for by Mr. Bowen, our intelligent house-surgeon.

On March 20th, I saw her for the first time, and noted the following symptoms. The integument of the inner half of the right lower lid is shiny and of a slightly coppery hue; and its surface slightly uneven. On taking the lid between the finger and thumb, a swelling occupying nearly one-half of the lid, of soft cartilaginous feel and slightly lobulated in front, is discovered; to the touch it closely resembles the remains of a large Hunterian chancre of the prepuce, for which mercury has been somewhat recently administered with effect. The margin of the swelling can without difficulty be clearly defined, there is no sort of blending with the surrounding tissue.

The voice of the patient is "veiled." In the base of the uvula is a small hole with a sharply defined and rounded edge; there is no secretion from it; the velum palati is white, and chronically oedematous; the right pillars of the fauces are in the same condition, and there is a little notch in the centre of the free margin of the anterior pillar, marking the seat of a cicatrised ulcer. These parts present a diffused pale pink shade.

The patient denies all knowledge of a primary sore of the genitals, and the existence at any time of leucorrhœa or ardor urinæ. The throat has been affected upwards of six months, and the eyelid about three months and a half. She has had medical treatment, which does not appear to have included mercury in any form, or specific treatment of any sort.

The disease commenced at the inner end of the lid, and was believed to be a stye, but it never suppurated. It was at one time inflamed, and became of a large size; a leech was applied with great relief, and the swelling diminished much. At the present time, the part is not inflamed or tender, and the conjunctiva is healthy. She was ordered to take every night a pill containing hydrargyrum cum creta and extract of conium, two and a half grains of each; and a drachm of syrup of iodide of iron in a cup of milk three times daily.

March 31st.—The tumour is nearly gone: the copper-coloured stain continues, as on the 20th, well marked. The patient is looking more healthy; she says she feels better than she has done for five years, and that her appetite is now excellent. Four pills only have been taken.

The preceding case affords an example of tertiary syphilis, of the same nature as the indolent nodes (lumps?) that sometimes form in the skin of the arms or its subjacent cellular tissue, and which are much benefited by preparations of iodine and sea-air.

ART. 101.—*An Undescribed Lesion of the Conjunctiva,
associated with Night-Blindness.*

By M. BITOT, of Bourdeaux.

(*Gaz. Méd. de Paris*, Juillet 4, 1863.)

M. Bitot, in a communication to the Academy of Medicine, has called attention to what he believes to be a hitherto undescribed affection of the eye attending night-blindness, and consisting of an assemblage of glistening white points on the cornea, giving the appearance of a pearly or silvery spot. His observations were made on twenty-nine cases of night-blindness which came under his notice in the Foundling Hospital at Bourdeaux. Of these, 19 were males, and 10 females. The night-blindness appeared between the ages of 9 and 17 in boys; between 10 and 19 in girls. The weakest children were free from it; it was most common in those who appeared to have the best constitutions.

The conjunctival lesion presents the following characters. It is always seated on the part of the eye which is exposed, during the waking state, to the action of the air. Its situation is generally to the outer side of the cornea; M. Bitot has never seen it above or below this membrane. It is readily distinguished by standing in front of the patient, and desiring him to direct the eye inwards. The spot is of a pearly silvery colour; it may be described as an aggregation of small points or delicate short lines. The colour varies little; but is more or less intense in different subjects, and according to the time when the spot is observed. When it is about to disappear, the whiteness loses its glistening appearance.

The form of the spot differs, not only in different subjects, but also even in the two eyes of the same individual. In general, it is triangular, with the apex turned outwards, and the base slightly concave, lying next the cornea. In some cases, it was circular or oval; in others, simply linear. Most usually, the particles composing it are agglomerated, so as to produce a dotted surface; sometimes they are disposed in parallel wavy lines, giving the spot an undulated or corrugated appearance. These forms may be modified by pressing on the eyelids with one or two fingers; and the change in form depends on the fact that the constituent parts of the spots do not appear to be connected, but simply in juxtaposition and capable of a certain amount of displacement.

The extent of the spot is in proportion to the intensity of the night-blindness. It was very large in two of M. Bitot's patients, who were absolutely incapable of distinguishing objects after sunset. It was never so large in persons who could see in the evening, although confusedly. At the commencement of the disease, the spots scarcely exist; they are represented by some pearly points, the first seat of which is always to the outer side of the cornea; these points multiply and extend as the night-blindness increases. In a general inspection of the eyes of the children of the hospital in 1861, M. Bitot found three in whom no affection of the sight was suspected, but who presented the spots in an early stage; he pre-

dicted that they would be affected with night-blindness, and the event soon confirmed his prediction.

The spots, which increase during the progress of night-blindness, and even encroach on the intracorneal portion of the conjunctiva, decrease as soon as the sight becomes stronger; and the decrease is rapid or slow, in proportion as the recovery of the sight takes place quickly or only by insensible degrees. When the sight has regained its normal condition, not a vestige of the spots remains.

M. Bitot has examined into the question whether these spots may be mere coincidences with night-blindness, and be connected with scrofula. So far from this being the case, he has found that, although scrofula was very common among the children in the hospital, the general health of those who had night-blindness was generally very good—two only of the twenty-nine being scrofulous. On the other hand, among the numerous rickety and scrofulous children, none presented any appearance of the conjunctival spots; and M. Bitot is not aware that such a lesion has been described as connected with scrofula. In 1862, he examined the eyes of such of the night-blind patients of the preceding year as had not quitted the hospital, and in none of these was there any reappearance of the spots.

As to the nature of these spots, M. Bitot has found, by scraping them with the nail and by microscopic examination, that they are produced by a special desquamation of the epithelium or the conjunctiva. Around the spots, especially to the outer side and as far as the palpebral commissure, the conjunctiva of the bulb does not present its normal characters. It has lost its moisture, softness, and brilliancy; and resembles parchment. Pressure on the eyelids accurately determines the limit between the disordered and the healthy portions.

ART. 102.—*The Fibrous Tunic of the Eyeball, or “Ocular Tunic,” and its Relations and Bearings in Ophthalmic Practice.*

By Mr. HAYNES WALTON, Surgeon to St. Mary's Hospital, &c.
(*British Medical Journal.*)

The remarks which follow were made in the course of clinical instruction at the Central London Ophthalmic Hospital. Mr. Walton says:—

“It may seem strange to say that, till lately, the anatomy of the ocular appendages was not correctly taught. An extensive and important membrane about the eyeball, concerned alike with operations and in the discrimination of disease, was not recognised in orbital dissections, but disregarded and taken away as so much cellular tissue to be cleared out, in order to render evident other anatomical relations.

“Knowing how little this structure is understood, how scarcely it has been alluded to either by anatomical writers or surgical

teachers, and seeing the importance of it, I shall make it the subject of a short lecture, describing the anatomy, and pointing out the influence it has in actual practice.

" So long ago as the year 1804, Tenon demonstrated this ocular tunic, and called it the tunic of the eye. Like, however, many valuable hints in anatomy and surgery, it was forgotten for a long series of years, till a later recognition of it was declared a new discovery. Drs. O'Ferrall and Bonnet were the next to treat of it, each claiming the merit of originality. The former made his views known in 1841, in the *Dublin Journal of Medical Science*, and to him indisputably is due the merit of surgical and pathological application. Bonnet's notice appeared a year later.

" I shall now give a description of this tunic, which has been also called tunica vaginalis oculi, cellular capsule, Bonnet's capsule, cellular sheath of eye, fibrous sheath.

" It is a distinct tunic of a white colour and fibrous consistence, continuous in front with the posterior margins of the tarsal cartilages, and, extending backwards, adheres to the optic nerve as this penetrates into the sclerotica. With the sharp end of a probe, or of a director, it may be separated from the eyeball, by breaking the fine cellular tissue which connects them. Within, it is smooth, facilitating the ocular movements; externally, it is loose and cellular. The muscular portions of the recti muscles lie at the outside, so that it insulates and protects the eyeball in the most perfect manner possible. Half an inch posterior to its front margin are six well-defined openings, through which the tendons of the muscles pass to their insertions in the sclerotic coat, and over which they play as through a pulley, and get their force properly directed, securing rotation, and opposing retraction, which would otherwise predominate.

" The readiest way of exposing the tunic is to cut through the palpebrae vertically, to turn back the separated parts, and to divide the conjunctiva at its angles of reflection from the internal surfaces of the eyelids to the ball of the eye.

" How different all this is from the usually received opinion of the orbital muscles being in contact with the eyeball.

" The first beneficial result of a proper knowledge of the tunic was the present improved manner of extirpating the eyeball, in which the conjunctiva is cut through close to the cornea, the recti and oblique muscles divided at their sclerotic attachment, and the optic nerve severed within the tunic; so that the orbit is, as it were, left sealed in front by the membrane. This contrasts greatly with the old operation of dissecting away the whole of the orbital fat and cellular tissue, when it was desirable only to get away the eyeball, and not any of the appendages, an act that can scarcely be justifiable, except in the somewhat doubtful measure of clearing out the orbit for a cancerous growth. The difference in the severity between the two processes and the after effects is great indeed. In the one, there is no shock to the system, and the patient is scarcely invalidated, and the effect passes off quickly in one or two days. The orbital vessels and nerves are left intact, and there can

scarcely be any bleeding. The extent of the other, the haemorrhage, the general bodily disturbance, and the somewhat risk, are well known.

"The better result in the operation for internal squint is also to be ascribed to the recognition of the ocular tunic. Formerly a very free dissection made at the inner corner of the eye, and unfrequently the tunic detached from its connexion under the supposition of being 'adhesions' that needed disconnection. The common issue of such mal-operating being frightful eversion of the eyeball with prominence. We now know how essential it is, in order to secure the correct ocular movements, that the divided muscle should acquire an attachment as near the natural spot as possible, through one or other of the four or five processes that *post-mortem* inspection has revealed to us, and which is beyond the range of possibility, if the parts in connexion, especially the tunic, be much cut and displaced. I think that prominence scarcely, if ever, occurs to any marked degree, when the tunic is not interfered with.

"Another addition arising out of this knowledge, is the greater facility and accuracy afforded in the removal of orbital tumours. Suffice it to say, that it greatly furthers the execution of such operation, whether the growth be solid, or encysted. On many occasions, I have been able to proceed with more confidence, better to avoid parts not involved in the disease, and to get superior results. It should be the object of the operator, in every instance, to preserve the tunic as intact as possible. On one occasion, while removing a fibrous tumour from the upper part of the orbit that had cellular connexions to the vestment, I was enabled by slow and careful scratching with the point of the scalpel, rather than cutting, to get the whole away without damaging it.

"The position of abscesses in the orbit, and their relation to the eyeball, can be better understood, and therefore, the evacuation of the pus more surely accomplished. When a student, I was taught always to keep the instrument, used for such a purpose, towards the wall of the orbit, lest the eyeball should be wounded. But if this be adhered to, how is the abscess to be got at when it is within the tunic. With the commonest care when here, it may be evacuated without the least risk. I have relieved several patients after other surgeons, not cognisant with the anatomical matter in question, have failed to find the pus.

"To Dr. O'Ferrall is due, too, the credit of recognising rheumatic inflammation of the ocular tunic; and, with his accustomed ingenuity and accuracy, he makes the anatomy of the eyelid available in the diagnosis. He shows that under the orbicularis muscle is a distinct layer of fascia, and that this is the first element of the eyelid that enters the orbit; that there is another layer of fascia beneath the levator palpebrae, which also enters it, and uniting with that above, forms a sheath for the accommodation and support of the muscle; and he points out the attachment of the ocular tunic to the orbital margin of the tarsal cartilages. This anatomical arrangement he then traces on the outer surface of the eyelid in the two portions separated by the natural fold of the skin, the upper portion consti-

tutting about one-third of the surface of the lid, the lower the remaining two-thirds. From these he makes the pathological deduction, that certain forms of disease within the orbit that are seated in, or internal to, the motor apparatus—that is, the substance of, or within the cavity of the ocular tunic, extend their effects to the lower portion of the eyelid, with which they are continuous, and that certain other affections situated external to the motor apparatus—which is that part of the orbit containing the fat—will show themselves by inflammation or other changes in the upper division of the same.

"The last subject to be noticed in connexion with the ocular tunic, is the greater light that Dr. O'Ferrall has been able to throw on the causes that protrude the eyeball. Inflammation of the ocular tunic will in itself cause ocular prominence. This is chiefly through effusion into the cellular membrane connecting it to the ball of the eye. The infiltration is apparent where the conjunctiva is reflected from the eyelid to the eyeball, just where this membrane closes up the ocular tunic in front. Here it receives the pressure of the effused serum, and becomes separated from the sclerotic coat by the extension of the infiltration. The amber-coloured chemosis originating in inflammation of the conjunctiva, is distinguished from it by redness as well as serous infiltration."

ART. 103.—*On Affections of the Tympanum, and their Danger to Life.*

By DR. VON TROELTSCH.

(*Deutsche Klinik*, No. 37, 1862; and *Med. Times and Gazette*, July 11, 1863.)

The delicate lining of the cavity of the tympanum does not admit of its being separated into mucous membrane and periosteum; and the membrane commonly called the mucous is also the supporter of the vessels of the bone, thus fulfilling the function of the periosteum. This duplex condition is of great importance, as long-continued or intense disease of the mucous membrane influences the nutrition of the bones constituting the tympanum. Every inflammation of the mucous membrane becomes a periostitis. If the inflammation is chronic there is thickening of the mucous membrane and hypertrophy of the bones; while, when acute, the membrane becomes ulcerated, and the periostitis oftener leads to atrophy of the bone and superficial caries. With increasing experience the author has become more and more convinced that caries of the petrous bone is infinitely more frequently due to neglected inflammation of the soft parts of the outer and middle ear than to any primary disease of the bone itself. We have only to consider the parts which surround the inflamed tympanum to learn how easily the affection may spread to these. The frequency of consequent perforation of the membrana tympani is well known; and the researches of Lebert and Gull confirm the conclusions arrived at by the author, that the extension of the inflammation through the roof of the cavity to the meninges

and the brain, and the production of abscess of the brain, is, indeed, no very rare occurrence. Important is the fact, that the diseases of the tympanum are taking place in the vicinity of many diploetic spaces, into which the inflammation is easily propagated in the form of osteophlebitis. This favours the formation of thrombus, which takes place the more readily from the propinquity of sinuses to the tympanum. Lebert has the merit of pointing out how frequently inflammation of these sinuses is due to otitis, and the fact, that the cerebral, typhoid, or pyæmic symptoms hence arising are commonly misunderstood. Then, again, how near the floor of the tympanum is to the jugular vein; and if the ill effects of collections of matter in the cavity have been little observed in this direction, this arises less from the rarity of the occurrence than the fact of these parts not being examined after death. The vein, as also the internal carotid artery, is only separated from the cavity by a thin, transparent plate of bone, which is often defective, and there is always danger of the caries extending in this direction. Finally, the labyrinth or the facial nerve may participate in the inflammation, and suppuration may take place within the porus acousticus internus, leading to purulent meningitis.

When we consider all these dangerous surroundings of the tympanum, we cannot but feel astonished at the indifference with which inflammation and suppuration of this portion of the ear have been hitherto treated, not only by the public, but by the medical practitioners themselves. Yet, it is in the cavity of the tympanum that accumulation and decomposition of secretions take place so easily, inasmuch as such secretions are usually of firm consistence, the walls of the cavity are full of depressions and sinuosities, and its floor is below the level of the passage by which these products might be discharged externally. As the lower edge of the membrana tympani does not extend to the floor of the cavity, even when this membrane is totally destroyed there is still no free issue of the discharges by the meatus. The narrow cavity of the Eustachian tube, the mucous membrane of which usually in these cases becomes tumefied, soon becomes obstructed with secretions, so that a discharge of these into the throat takes place much seldomer than is generally supposed. By the passage of the discharges into the cells of the mastoid process nothing is gained, unless it serve to arouse the practitioner's attention to the threatening danger. Although in the great majority of cases, when dangerous *otitis interna* exists, purulent discharges and perforation of the membrane are present, these conditions are not essential accompaniments. The membrane sometimes acquires great power of resistance from the thickening it has undergone during the early stages of the inflammatory process; while, in other cases, the otitis runs its course so rapidly as to terminate in a fatal issue before the membrane has yielded. Still, the cases on record in which death has taken place without perforation are few in number. The author believes the profession and public in England are far more alive to the dangers of chronic otorrhœa than they are in Germany, judging from the numerous preparations contained in the hospital museums, the cases recorded, and the fact, that life-assurance is

effected with difficulty when this affection exists. He believes, judging from his own experience, that could an exact statistical account of the average duration of life of individuals suffering from chronic otorrhœa be procured, very surprising results would be obtained. It is true that there are numbers of persons having purulent discharges from the ear, who remain entirely well, and who, possibly, after a long course of years, succumb, so far as our knowledge goes, to some disease having no relation to the affection of the ear. But Dr. Von Troeltsch, who for many years has had the opportunity of watching a considerable number of individuals suffering from chronic affections of the ear, has been struck with the large proportion of these cases, mostly men in the prime of life, who have died somewhat suddenly, the subjects of acute tuberculosis of the meninges, the lungs, or the intestinal canal, exhibiting symptoms of a septic infection of the blood. He has long since put to himself the question, whether some forms of rapid tuberculosis may not be explained by an infection of the blood, due to some purulent collection. Professor Buhl, of Munich, has proved by facts that acute miliary tuberculosis may thus originate. What more likely to serve as such source of infection than pus accumulated in the middle ear and its cellular communications, and there undergoing caseous metamorphosis?

ART. 104.—*On a Peculiar form of Otitis and Deafness Induced by the Immoderate Use of Tobacco and Fermented Liquids.*

By M. TRIQUET.

(*Journal of Practical Medicine and Surgery; and Medical Circular,*
May 13, 1863.)

Persons addicted to intemperance, or the immoderate use of tobacco or snuff, are liable to a peculiar kind of otitis, which, according to M. Triquet, promptly induces obstinate deafness. This affection of the ear is unaccompanied by puriform discharge, accumulation of mucus in the drum or Eustachian passages, or thickening of the membrana tympani, but is connected with that morbid condition of the system which follows the protracted action of injurious substances, and especially of alcohol and tobacco, whatever be the form in which either may have been indulged in.

The leading characteristics of the disease are a sort of torpor of the ear, with a sensation of refrigeration of the organ; no pain exists, the ceruminous secretion is absent, no alteration can be detected in the ossicula or membrana tympani, which is not preternaturally vascular; and the pharynx, nasal fossæ, Eustachian tubes, and middle ear, are drier than in health. Both ears may be simultaneously affected, the hardness of hearing, at first slight, soon becomes inconvenient, and tinnitus exists from the beginning, with a peculiar hissing intonation.

This otitis, induced by the abuse of fermented liquids, snuff, or tobacco, was formerly confounded with *nervous* deafness, resulting

from unknown causes. For a long time, M. Triquet acknowledges that he fell into the same error, a mistake difficult to avoid, on account of the close resemblance of the anatomical and physiological signs in both instances, and because the discrimination chiefly reposes on a knowledge of the cause (*alcoholism, excessive addiction to the use of tobacco*), and also on certain symptoms of a subjective character, which in many cases prove deceitful. A careful inquiry into the history of the patients will, however, generally lead to a correct diagnosis at an early stage of the affection, before what M. Triquet denominates the paralytic period, has set in.

The progress of the disease may be divided into three periods. The first is marked by local excitement, intolerance of sound, and sharp, sibilant tinnitus. In the second, the irritation is followed by corresponding depression; tinnitus, and singing in the ears have departed, and the patient experiences a sort of craving for acute intonations; and the third is characterized by paralysis of the auditory nerve and destruction of its function.

The symptoms of each stage deserve peculiar attention, and were described by M. Triquet as follows:—

A person long addicted to habits of intemperance or to the immoderate use of tobacco or snuff, is in general suddenly disturbed at night by a sibilant sound in both ears, analogous to metallic tinkling. This phenomenon decreases in the course of the day, but returns after meals, especially in the evening, and uninterrupted persists throughout the night. The slightest noise causes pain, and even the suppressed murmur of conversation is distressing, and the patient stops his ears with cotton, or with the tips of his fingers, not only in the street, but at home, in the midst of persons whose voices have long been familiar. This condition may last a few days or weeks, a month or two at most, and is immediately followed by the symptoms of the second stage, that of depression.

The subject congratulates himself at first upon what seems to be an improvement. The tinnitus has much diminished, and may even have entirely ceased. The distress occasioned by noise and sharp sounds is replaced by an opposite condition. The patient now seeks loud conversation, and complains that he is addressed in too low a tone. This deceitful amelioration lasts, however, but a short time, the last period of the disease is at hand, and sometimes suddenly, in the course of a night, the patient, to the surprise of all his friends, becomes stone-deaf.

This third or paralytic stage is the longest and most distressing, and with some few exceptional cases in which, by timely medical interposition, some amendment is effected, the more or less complete abolition of the sense of hearing, which is the leading symptom, obstinately persists with all its evil consequences, cutting off the patient from all social intercourse, and inducing a state of melancholy which occasionally leads to self-destruction.

This kind of deafness is not unfrequently accompanied by debility or perversion of some other organ of special sensation. Thus M. Triquet has often met in such cases with congestive ambliopia, with marked vascularity of the retina and optic disc; although

vision is not impaired in the same degree as hearing, it has, even in the young, lost a considerable amount of its power. Olfaction is also more or less obtuse, a fact to be accounted for by the numerous communications existing between the nerves of these various organs. In some few instances, a marked diminution of the intellect, and vacillating movements in walking, indicate the propagation of the injurious effects of tobacco and alcohol to the brain and spinal cord.

As we have stated, the otitis which induces the succession of phenomena above described, is to be referred to the immoderate use of tobacco or alcohol. The presence of this cause, and of the symptoms we have enumerated, are sufficient for the purposes of diagnosis; M. Triquet, however, attributes pathognomonic value to the purple redness of the fauces, with minute granulations, which impart a shagreened appearance to the mucous membrane. Where this sign coincides with the others, no doubt whatever can subsist that the otitis and deafness are the result of the abuse of tobacco or alcohol.

The prognosis of the third stage is most unfavourable; medicine is of no avail but in the first and second periods of the disease, and incurable deafness supervenes. With every new remedy the deafness seems to increase, especially if the treatment be of a stimulating nature, such as electricity or galvanism. With these desperate *noli me tangere* cases, M. Triquet conceives it best not to interfere. Palliatives and the waters of Saint-Sauveur may be prescribed.

It is unnecessary to say, that in all stages of the affection, the first measure to be adopted is the suppression of the injurious habit in which it has originated.

During the first, or congestive stage, cupping behind the ears, leeches to the seat, in persons who have a tendency to piles, will be found advantageous. The regularity of the catamenial function will also require attention.

In the second period, M. Triquet has derived much benefit from fumigations with the acetate of ammonia; but he considers the injections of veratrine as especially applicable in this variety of otitis.

ART. 105.—*On Syphilitic Disease of the Mouth.*

By Professor SIGMUND, of Vienna.

(*Wiener Med. Wochenschr.*; and *British Medical Journal*, Oct. 3, 1863.)

Professor Sigmund, one of the most eminent syphilologists of the present day, has for some time past been publishing in the *Wiener Medizinische Wochenschrift*, a series of articles on syphilitic disease affecting the mucous membrane of the lips and mouth. He has been led to this by having lately met with, both in hospital and in private practice, an unusually large number of cases of this kind; and a similar occurrence took place in 1850, when the patients attributed the disease—erroneously, as Dr. Sigmund has been led to think—to the use of cigars. He treats first of primary and afterwards of

secondary syphilitic disease of the mouth. On the present occasion, we give a somewhat condensed translation of his remarks on the primary syphilitic affection of this part.

Primary Syphilis affecting the Lips.—Most of the cases that came under Dr. Sigmund's notice were in males. The most frequent seat of the disease was the upper lip; and here, as well as on the lower lip, the centre was usually affected, the disease being more frequent and more extensive on the exposed red surface than on the surface next the gums. Primary chancres were rarely seen at the angles of the mouth, and were always confined to one angle. As on the genital organs, the disease first appeared as a simple infiltration of the skin and cellular tissue, with or without the formation of an ulcer.

The indurated chancre, unattended with ulceration and suppuration, appears first as a mere abrasion of the epithelium, with slight swelling of the corium, which presents also fissures of greater or less extent, that sometimes bleed. At a later period, a dead white, yellowish, or brownish, generally firmly adherent scab, is formed of the epithelial *débris*, serum, and blood. The infiltration frequently extends inwards beyond the denuded part: the diseased portion of integument, however, acquires the appearance of having been burned or scalded by a cautery. The edges and base of the infiltration are at first moderately hard; but the hardness increases in the course of the disease, as may be proved by comparison with the healthy surrounding parts. The hardness extends itself either superficially into the skin and upper layer of areolar tissue, or deeply in the form of a roundish knob. In the further progress of the disease, the scab becomes separated, and the corium projects and is observed to be overlaid with epithelial *débris* and pus. A well-defined, sometimes channeled, border denotes the limit of the epithelial abrasion. New epithelium is gradually formed at the edge of the abraded part; it has a pale white appearance, and gradually covers the part, so that a new integument is in time formed. The new skin is smooth, very tender, is easily torn, often desquamates anew, and is not safe from lesion until the induration has disappeared, and the ordinary softness and elasticity of the mucous membrane have been regained. The characters of the normal tissue of the part become so perfectly restored, that not even the practised eye can discern a trace of the chancre. The extent of the disease varies from the breadth of a lentil-seed to that of a finger-nail; the infiltration is almost always confined to one spot. The disease is never produced in the sound lip by the contact of the diseased one.

Indurated chancre with ulceration is developed in a different manner. If the infection be accompanied by a wound or fissure in the part, or if this occur at a later period in the infiltrated part, a portion of the affected tissue becomes purulent: this may be produced through the destruction of the tissue by the chemical action of fluids, or by other irritating articles, such as tobacco and caustics, and by decomposed animal fluids, such as blood and pus. While several of these causes operate on the genital organs, so as to

produce frequent and great destruction of tissue, it is only through great neglect of cleanliness that any great mischief can be produced by their action on the lips; and when they act, it is most frequently at the angles of the mouth. The observation so often made in regard to the genital organs, that the disease commences with a purulent ulcer within the first twenty-four or forty-eight hours after infection, while the induration is not observed until the second or third week, can very seldom be made in regard to the lips. If the disease occur in an anaemic or cachectic constitution, and the patient be exposed to deleterious influences, such as cold, damp, impure air, or have improper diet, those well known obstinate ulcerations occur which are frequently enough met with on the genital organs, but seldom on the lips. The process of repair of the lost tissue in such cases is always imperfect, and even for years the cicatrix is distinctly visible. The edges and base of these ulcers remain long indurated; and it is only gradually that the extensibility and pliability of the tissue of the lips is able to obliterate any observable traces of the disease.

Venereal non-indurated sores appear so very seldom on the lips, that up to a recent time their occurrence here (or on any part of the head) has been denied. But Dr. Sigmund has no doubt of their occasional occurrence, although it be very rare.

The communication of infection from the diseased to the healthy, may be either direct or indirect.

The direct communication of syphilis takes place most frequently through the contact of the lips of a diseased person. The infectious matter is furnished from the mucous membrane of the cheeks, palate, throat, and tongue, mixed with mucus, saliva, pus, and serum. The inoculation of blood alone is sufficient. The infecting matter, however, does not affect the healthy person unless it rest on a surface denuded of skin. The knowledge of this fact, in combination with that of the long incubation and mode of development of syphilis, explains those occurrences for which very exceptional explanations have been offered, and which often have appeared to admit of none; it especially explains the fact, not unfrequently observed, that an individual may communicate a perfectly characteristic chancre to another, and yet may present no appearance of syphilis on the part with which he has touched him. It explains also how the communication of syphilis by the mouth is comparatively so infrequent, although the custom of kissing is so very common even among men; for the infecting material takes effect only when it comes into contact with parts denuded of skin. Infection sometimes occurs through contact of the genital organs with the lips, through a disgusting practice (*coitus viri cum labiis oris feminæ*). No case has occurred to Dr. Sigmund in which the communication of syphilis could be referred to the sucking of the wound made in circumcision. Doubtful instances of this kind have been frequently related to him; but it has not been proved either that the children were syphilitic, or that the circumciser may not have become infected from some other source. On the other hand, the communication of syphilis to the finger, and thence to the lips, has been repeatedly noticed. A

case of this kind, which Dr. Sigmund has observed lately, was that of a midwife who was supposed to have a whitlow on the right forefinger, but in whom the appearance of secondary symptoms (the genital organs and other parts of the body exhibiting no trace of primary disease) showed that the finger was affected with primary syphilis. The skin of the ungual phalanx around the nail was infiltrated, of a deep red colour, and peeled off; and there were bleeding fissures at the fold of the nail. The child under her care contracted a chancre at the right angle of the mouth, and afterwards had constitutional syphilis. The midwife had nine weeks previously attended in confinement a woman who had papular syphilitic eruption.

Indirect infection most frequently occurs in persons who use instruments which may have been introduced between the lips of patients affected with syphilis of the mouth. Musicians who play on wind-instruments, and workmen who use blowpipes (as glass-blowers) are most frequently affected in this way. A very interesting case of this kind occurred in two chemists, who were accustomed frequently to work in their laboratory with the blowpipe. One of them had secondary syphilis and desquamated papules on the mucous membranes of the lips, mouth, and tongue. One blowpipe was in common use with them. His colleague contracted a chancre on the upper lip, without showing any other primary symptom, and without having been in contact with any other source of infection. A similar case was also observed six years ago in a chemical laboratory, where two healthy persons were affected in rapid succession by the same diseased individual. Communication of syphilis through smoking takes place most frequently where pipes are more used than cigars. Dr. Sigmund has observed very few cases of this kind; and the idea entertained in 1850 and 1851, that the syphilitic affections of the lips then prevalent were due to the use of infected cigars, was proved incorrect by an accurate inquiry into the source of the disease in twenty-seven cases. Examination of the persons employed in cigar manufactories—almost all women and girls—proves the comparatively great rarity of syphilis among them; and the exemplary cleanliness observed in the manufacture renders it almost incredible that the cigars can be charged with infecting matter.

The experience of Dr. Sigmund has afforded him an opportunity of observing an unusually great number of ways in which syphilis may be indirectly transmitted. Many of the data of such cases fall to the ground on unprejudiced consideration, and still more on continued observation of the alleged facts; and hence some deny altogether the mediate communication of syphilis. Unprejudiced and sufficiently extensive and accurate observation must, however, establish more certainly the extent and frequency of mediate transmission. If traces of primary infection be not found on the genital organs or anus, the mucous membrane of the lips, mouth, and fauces should be the more carefully examined. Whenever many men, collected together, use in their common occupation instruments by which infection may be conveyed, especially such as are applied to the mouth,

careful attention should be directed to this source of infection ; and the diagnosis and etiology should not be grounded merely on the history given by the patient, but on what has been observed by the medical man himself.

Dr. Sigmund believes it very probable that many cases of syphilis in children, which are attributed to other causes, are traceable both to sucking and to artificial feeding, as from a bottle. He refers to a case in which vaccination was blamed as the cause, although nothing abnormal was observed in the development of the vaccine pustule, and it was not until three months afterwards that a chancre appeared at the angle of the mouth. The wet-nurse and a servant in the house both had syphilis ; the child was suckled by the first, and was artificially fed by both.

Primary syphilis has never been observed by Dr. Sigmund on the inner surface of the lips and cheeks, on the gums, or on the hard palate ; while secondary disease is not unfrequently met with on these parts, especially on the lips, cheeks, and tongue ; the same observation is applicable to the soft palate and tonsils. He has, however, observed cases in which limited circular infiltrations with epithelial desquamation were met with on the tongue, tonsils, and soft palate, without any syphilitic disease being discoverable on the lips, genital organs, or any other parts of the body. It was extremely probable that the infecting matter had been applied directly to the parts affected ; and this view was confirmed by the observation of the further extension of the disease from these points.

It is most frequently in sucking children and in those fed artificially, that several infected spots are observed in the mucous membrane of the mouth. From the often imperfect observation made by those who have the care of such children, it is not strange that the first manifestations of the disease should be overlooked ; since, as is frequently the case, they consist of simple infiltration with more or less desquamation and fissures in the mucous membrane, and gradually heal without proceeding further ; giving place, however, to a host of constitutional symptoms, the primary source of which is often traced with great difficulty, frequently not at all.

The course of chancre on the lips does not differ essentially from that on the genital organs. Abrasions and local destruction of the integument are favoured by friction, bruising, biting, and by the action of the fluids of the mouth ; if it be protected from these influences, the diseased part becomes gradually skinned over, and remains indurated for a longer or shorter time, according to the constitution and habits of the patient, and the treatment to which he is subjected. Even during the continuance of very moderate induration or thickening, new desquamations or destructions of tissue are very easily produced, as is observed also on the genital organs. The lymphatic glands in immediate connexion with the diseased parts are at the same time infiltrated, and gradually those which are more distant ; first the glands beneath the lower jaw, then the upper and posterior cervical glands, and then the axillary and remaining cervical glands ; even the inguinal glands may become involved. Blotches are formed on the external skin ; but, being

usually of short duration, are not always observed ; and accompanying and following these appear scattered papules, usually in small numbers, partly on the face and hairy scalp, partly on the neck, to which they gradually extend from the head. In a number of cases, however, all these appearances affecting the external skin are not produced, or are very scanty and limited in extent ; while the palate and tonsils, both together or in succession, more frequently the latter, are the seat of sharply defined swelling, redness, and infiltration, which is soon followed by desquamation of the epithelium and follicular inflammation of the tonsils. The secretion from these, united with the muco-pus from neighbouring parts, forms often a more or less copious yellowish discharge. All the patients do not suffer from dryness, heat, burning, or difficulty in swallowing, breathing, speaking and coughing, which might be assumed to be the necessary results of such disease ; on the other hand, changes in the voice, even amounting to its loss, are constantly observed ; and in persons whose voice was known to Dr. Sigmund before they became diseased, he has observed this change to be produced in the slightest cases. The disease of the palate and tonsils appears first after the chancre of the lips has lasted some time, and simultaneously with the affection of the glands. That the infiltration of the cervical glands is not a mere consequence of the disease of the palate and fauces, is proved by the fact that in some patients these parts remain unaffected, and yet the glands become infiltrated. Certainly, the swelling is increased in several, as the anterior cervical and submaxillary lymphatic glands, as soon as the mucous membrane between the jaws and on the palatine arches and tonsils becomes affected.

The time within which secondary or constitutional symptoms are developed from the local or primary disease, is the same here as in the genital organs. Two or three weeks, seldom later, after the first appearance of the disease on the lips, the glands become diseased—*i. e.* from the sixth to the seventh week after the first inoculation, as the incubation-period of syphilis is of two or three weeks' duration. An apparent exception occurs when the contagion is imparted at the same time from a soft venereal ulcer (chancreoid). An ulcer then generally appears in from twenty-four to forty-eight hours, the edges and base of which become indurated at a later period, even in the second or third week. Even here, also, the induration which occurs from the second to the third week, with the gradually developed affection of the lymphatic glands, is characteristic of syphilis ; and we observe the same course followed as in "mixed" chancre of the genital organs, and the usual results of this. Acute inflammation of the nearest submaxillary lymphatic glands sometimes even appears, leading to suppuration, as in the soft contagious sore of the genital organs. This combination of the contagious ulcer with the infectious infiltration affords an opportunity for the extension of the disease to neighbouring parts, and gives rise to the production of numerous and extensive purulent discharges followed by slow cicatrization ; while the syphilitic infiltration (induration) once developed does not allow the transmission of the disease in the same individual, even to the adjacent parts or to those with which it comes into contact.

The treatment of chancre of the lips differs from that of the genital organs only in the adaptation of the remedies to the special condition of the part. As local applications, Dr. Sigmund recommends corrosive sublimate (one part in eight of spirit); sulphate of copper and nitrate of silver (iu substance, or one part in six of water). Solutions of caustics in glycerine are useful, on account of their not drying too rapidly. Calomel, corrosive sublimate, sulphate of copper, or white precipitate, may also be advantageously combined with diachylon plaster in cases where it has been the custom to use Vigo's plaster. In the application of the remedies, the surgeon should take care to carefully cleanse and dry the diseased spots, and to apply the remedy in very small quantity—in the fluid state, with a brush, is preferable; this is to be repeated daily until the spots are perfectly covered with skin. If considerable reaction follow the use of the stimulant applications, the surgeon must withhold them for thirty-six or forty-eight hours. If firmly adherent scabs be formed, an attempt should be made to remove them without injuring the skin, after first oiling them. If the scabs adhere firmly, and no fluid be concealed beneath them, the formation of skin goes on, and the scabs gradually scale off and leave the new epidermis, somewhat thinner and paler than that in the vicinity. The induration, however, remains for a long time; in some otherwise unhealthy persons, from six to nine months. The formation of new skin and the removal of the induration and of the secondary symptoms are hastened by the combination of local with general treatment. The object is soonest gained by inunction with blue ointment; other mercurial preparations, as corrosive sublimate, calomel, protiodide of mercury, &c., are more tedious in their action. The most thorough cleansing of the mouth and fauces is always necessary. From the commencement of the treatment, lotions and gargles, consisting of solution of chlorate of potassa, borax, alum, sulphate of zinc, tanuin, &c., according to the individual state of the mucous membrane, must be frequently used. The teeth and gums must be kept clean by means of charcoal; and if the tonsils be swollen, some of the above-named solutions may be inhaled through the nose or injected on them by the mouth.

ART. 106.—A Case of Pneumatocele of the Skull following Fracture of the Petrous Bone, in which the Patient Recovered.

By M. CHEVANCE, of Wassy.

(*Bull. de Thér.*, Août 30, 1863; and *British Medical Journal*, Oct. 10, 1863.)

Emphysematous tumours of the cranial region do not seem to be common. One has been recorded by M. Jarjavay; and another by M. Balassa of Pesth, in the *Archives Générales de Médecine* for 1853. To these, M. Chavance adds the following:—

CASE.—A miner, aged 44, of good constitution, fell, in 1850, from a height of five mètres (nearly five yards and a half) on his feet, and immediately felt a

very intense fixed pain at the back of his head, on the left side, with dazzling of the eyes, slight giddiness, and singing in the ears; he felt stupefied also for half an hour, but did not lose consciousness. He said afterwards that he several times heard a crackling sound at the back of his head, in the situation of the pain. There was no wound, nor any escape of blood or of any fluid by the ears, nose, or mouth. The symptoms which followed were, pain at a distance of five *centimètres* behind the left external auditory meatus, and difficulty of swallowing on this side. No treatment was pursued. Six weeks afterwards, there was difficulty of hearing, and constant troublesome buzzing noises in the left ear. At the same time, there appeared at the painful spot a small tumour, which remained stationary eight months, and then increased rapidly in size, so as to occupy the left posterior half of the head and almost the whole of the occipital region. Two punctures were made in it by a medical man; but air only escaped. At this time, seventeen months after the receipt of the injury, the patient entered the hospital at Wassy. At this time, the tumour commenced four *centimètres* from the ear, had a transverse extent of fifteen *centimètres*, and extended from the neck to the back of the head, forming a curve of twenty *centimètres* in extent on the left side and eighteen on the right. It was painless, elastic, resistant to pressure, without heat or any trace of inflammation, and gave a tympanitic sound on percussion. There was no pulsation nor fluctuation. On being punctured with a trocar, it gave issue to gas alone, which, on being collected under water and tested, presented all the characters of atmospheric air. After its removal, there were found, a little above and behind the mastoid process, about four or six *centimètres* from the left auditory meatus, two hard, bony, unequal projections, between which a depression was felt; it was in this situation exclusively that the patient had always complained of pain. When the man made a strong expiration, the nose and mouth being closed, the air escaped with a hissing sound through the left ear. When the swelling was compressed with the hand, it collapsed, and gradually shrivelled, producing, the patient said, a crackling sound in the left ear. The membrana tympani was torn.

M. Chevance concluded that the case was one of fracture of the petrous bone by *contrecoup*, producing a communication between the tympanic cavity and the areolar tissue lying beneath the scalp; and in this way he explained the gradual formation of the pneumatocele. In order to produce a radical cure, he determined on provoking adhesive inflammation on the walls of the tumour. A seton was therefore introduced, by which violent inflammation was set up; and on the third day, there was an abscess which, on being opened, discharged 500 grammes of pus. In a month, the adhesion of the skin appeared complete. But, two months afterwards, the tumour again formed, being attended with the same symptoms. An abscess was, therefore, again evicted by the introduction of another seton; and on this occasion the cure was permanent. In M. Ballassa's case, also, the cure was completed by the excitation of inflammation so as to produce adhesion of the integuments.

ART. 107.—*A Symptom of Fracture of the Base of the Skull.*

By M. DOLBEAU.

(*Presse Méd. Belg.*, Avril 27, 1863; and *British Medical Journal*, June 7, 1863.)

In a communication made to the Surgical Society of Paris, M. Dolbeau has called attention to the presence of ecchymosis of the

pharynx at its upper part as a sign of fracture of the base of the skull. In a case admitted into the Bicêtre, where death took place twelve days after the receipt of the injury, the patient complained, when sensible, of pain in swallowing. On examination after death, the base of the skull was found fractured ; and there was infiltration of blood behind the pharynx, from the occipital bone to the second cervical vertebra ; the mucous membrane of the pharynx was also evidently ecchymosed. In two other cases in which the symptoms pointed to injury of the base of the skull—contusion in one, and fracture in the other—and in which recovery took place, pain in deglutition was complained of ; and, on examination, in each case there was found to be ecchymosis of the posterior wall of the pharynx. The portion of the pharynx in which the ecchymosis occurs is rather difficult to be seen ; it is limited by the bone of the skull above and the velum palati below, by the vertebral column behind, and the posterior orifice of the nares in front.

ART. 108.—*A Specimen of Fracture of the Odontoid Process of the Axis, with Perfect Ankylosis of its Apex with the Occipital Bone, and Partial Luxation forwards of the Atlas.*

By Mr. PHILIP BEVAN.

(*Dublin Medical Press*, February 18, 1863.)

This important specimen, which was exhibited at a meeting of the Surgical Society of Ireland, was discovered accidentally while making a dissection of the ligaments of the spine. On opening the spinal canal, and removing the dura mater, the perpendicular ligament or apparatus ligamentus colli was normal in size and strength, but on removing it, the apex of the odontoid process of the axis was found to be connected by perfect bony union to the anterior margin of the foramen magnum of the occipital bone, whilst its neck was attached to the body of the bone by a fibrous substance, about three-quarters of an inch long, of great strength and thickness, which closely resembled that which ordinarily unites the fragments of a broken patella. On cutting into this substance, the transverse ligament was found of its natural strength and thickness, retaining its normal connexion to the atlas on either side, but completely altered in its relations and position ; for instead of passing behind the odontoid process, with a concave surface covered with cartilage and synovial membrane, directed towards that process, it now lay between the broken-off point of the odontoid process and the body of the axis, with flat surfaces upwards and downwards. It still presented its usual glossy appearance when dissected from the fibrous tissue in which it was imbedded, and was fully as strong as in the natural state ; but the smooth, articular surface and synovial membrane were removed from its anterior surface. Not a vestige of either the moderator or suspensory ligaments remained. Having

dissected the anterior surface of the spine, the upper articular processes of the atlas retained the normal relations to the occipital condyles; but the lower ones were thrown forwards, considerably in front of their natural position on the dentata, and were supported there by a bony growth from the anterior margin of its articular processes; in fact, the atlas was partially luxated forwards, for want of the support of the odontoid process, and the axis was modelled so as to support that vertebra in its new position.

The anterior atlanto-axoidal ligament was very strong, and must have served to prevent further displacement of the atlas.

On examining the bones the following changes were found to have taken place:—The occipital foramen magnum was completely changed in shape, being heart-shaped, instead of oval, owing to the attachment of the apex of the odontoid to the centre of its anterior margin.

Its transverse diameter is greater than the antero-posterior, the former being one inch and a quarter, whilst the latter is only ten-twelfths of an inch.

The most normal size is the reverse of the above.

The apex of the odontoid is so completely incorporated with the occipital bone, that, but for a slight crack on the right side, no appearance of the line of union would be perceptible; the base of it is *smooth as if cut with a knife*, where it was attached by a fibrous tissue to the body of the axis. The occipital condyle of the right side is unaltered, but that of the left side is changed in shape, axis, and direction, being flat, circular, and directed downwards and outwards; transversely larger than natural; about three-fourths of an inch in diameter; smooth and covered with cartilage on its surface, but rough and irregular round the margin. The inner surfaces of the condyles are quite smooth, instead of being rough, for the attachments of the moderator ligaments.

The upper articulating surfaces of the atlas are not much altered; the left one is more round than oval, and not contracted in the centre, as in the normal state. The lower articular processes, on the other hand, are much altered, being rough and irregular on the surface, surrounded by a bony growth, as in cases of chronic rheumatic arthritides, and much larger than natural, especially in the antero-posterior diameter; but the chief alteration has taken place in the anterior ring of the bone; it is contracted inferiorly by irregular growths from the lower articular processes. The posterior surface of the ring is prominent and rather rough (instead of being smooth and lined with cartilage and synovial membrane); it was here firmly united to the fibrous tissue, which united the apex to the base of the odontoid process. The lower surface of this ring is thick and broad, where it lay on the upper surface of a process of bony growth from the anterior margin of the odontoid process.

The axis is also much altered; the body of the bone terminates above, in the base of odontoid, from which the apex has been broken; from the front of this a bony mass has grown in a groove, on the top of which rested the anterior ring of the atlas, with which it was connected by the above-mentioned mass of fibro-cartilage;

the upper articular processes are on different planes, the left being lower than the right, both of them are much enlarged by bony growth from their anterior margin, which overhangs the body of the bone to the extent of a quarter of an inch. This served as a support for the luxated articular processes of the atlas. The surfaces are rough and were covered by a very imperfect cartilage; the right is convex; the left concave.

The remains of the base of the odontoid is rough and very convex towards the vertebral canal; its upper surface is very irregular, being grooved transversely in front for the anterior ring of the atlas and behind for the attachment to the fibro-cartilage. It is much enlarged by the bony growths above described, being about two inches in circumference at the part corresponding to the neck of the process, and is so rough and irregular as to give it much the appearance of the bone represented in Mr. Adams' book, "On Rheumatic Arthritis."

"I am not aware," says Mr. Bevan, "of any case similar to the above. Rokitansky says that, 'in a few cases, fracture of the odontoid process has not only not proved fatal, but has existed for a considerable time without union of the fragments. A specimen of this kind is contained in the Vienna Museum.'

"He gives no particulars concerning it, says nothing of the state of the moderator ligaments, or whether the point of the odontoid was ankylosed to the occiput; nor does he mention the partial luxation of the atlas.

"The specimen was taken from a woman, aged about 40, who died of dysentery in one of the Dublin unions; all her bones were healthy and strong.

"Although it is impossible to obtain a history of such a case, yet I had sufficient evidence that she never had anything remarkable about the motions of her neck; nor had she ever complained of pain or stiffness. Indeed an examination of the preparation would prove that she must have had considerable power of moving the neck, as the fibrous tissue, which united the base and apex of the dentatus, although very strong, would permit a considerable amount of twisting, which with the ordinary circumduction of the remaining cervical vertebrae would be sufficient for all ordinary purposes, and the nodding motions could not have been interfered with.

"It was, till lately, a generally received opinion that both luxations and fractures of the odontoid process were necessarily fatal. Thus Chelius says, 'that if fractures occur with luxation above the third vertebra, death speedily ensues.' Samuel Cooper says, 'that whenever the processus dentatus is suddenly displaced or fractured, the effects on the medulla spinalis must be immediately fatal.' Sir A. Cooper, Boyer, and Dupuytren, all declare that such cases are necessarily fatal. This opinion can no longer be admitted as regards fractures of the odontoid process, although I believe it is correct as regards luxations of that bone; for I cannot find any case of recovery where this process was proved by dissection to have been luxated without fracture. Two cases of supposed reduction of luxations of the axis are given in Malgaigne, but in both the diagnosis

was very doubtful; in the first, the only important symptom was, that the head was bent forwards, so that the chin rested on the sternum. This might have been a luxation of any other cervical vertebra; and, in the second, although the constitutional symptoms were more important, and the head was thrown backwards, and to the right side, still it was equally doubtful which vertebra was luxated, or indeed whether any vertebra was luxated. The interesting cases given by Dupuytren in his work 'On Fractures,' prove that it is extremely difficult to diagnose between severe contusions of the muscles and ligaments of the neck, and luxation of the cervical vertebrae. In one of these cases the head rested on the left shoulder, could not be straightened, was accompanied with violent pain in the opposite side of the neck, numbness of the corresponding arm and cheek, difficulty of deglutition, and inability to turn the head without the body; in fact, all the symptoms of luxation were present, and a luxation was supposed to exist; yet, in a few days, all these symptoms were removed by mere leeching and stupefaction. It is difficult to believe that a luxation of the odontoid process without fracture could occur without death supervening, if we recollect that either the transverse ligament must be broken, or the point of the process must pass under that ligament, which cannot occur without laceration of both the moderator and perpendicular ligaments, and that, in either case, the process must directly press upon the medulla oblongata, on the slightest motion of the head forwards.

" But although luxations of the odontoid process must be fatal from pressure on the medulla, fractures of that process are by no means necessarily so. No doubt most of these must be fatal, either from the fearful shock to the system caused by such an amount of violence as is required to break that bone, or from the extravasation of blood on the medulla; but should the patient escape those dangers, there is no necessity for him to die of pressure of either of the fragments on the cord; in fact, the apex will be kept *in situ* by the moderator and transverse ligaments, whilst the base is retained by the powerful* apparatus ligamentosus colli. In experiments on this subject, having first cut across the odontoid process with a fine saw, without injuring the ligaments, in attempting to force the spine forcibly forwards, I found that the bones themselves gave way before any considerable amount of pressure was made on the medulla by the body of the axis, owing to the great strength of this ligament.

" Malgaigne has collected three cases of this fracture of the odontoid with luxation of the atlas; in one, the patient lived seventeen days; in the second, he lived for one month and six days; and, in the third, he lived for four months.

" Whilst a still more interesting case is given by Dr. Parker, of New York, where the patient walked about on the fifth day after the accident; on the ninth day resumed ordinary occupations; continued at his work, notwithstanding constant pain in the head and neck, for five months, when he suddenly became paralysed and died;

* This ligament is so strong that it has been divided into three layers by Dr. Humphrey in his excellent work, "On the Bones."

yet the odontoid process was broken off, and its lower extremity was pressing on the cord at the time of his death.

"This specimen proves, not only that a patient may live for months but for many years, as there can be little doubt that the accident happened in very early life. Indeed, that it occurred before the union of the epiphysis was consolidated to the body of the bone is rendered extremely probable, by the ankylosis of its apex to the occiput, as it is well known that the point of that process is the last part ossified, and would, therefore, be more likely to become adherent at that time than after the process of ossification had been completed. The alteration in the shape of the anterior ring of the atlas, and the smoothness of the surfaces of the occipital condyles, where the moderator ligaments were attached, would lead to a similar conclusion.

"In order to produce the accident, the neck must have been first violently twisted, so as to tear away the moderator ligaments, and then the neck must have been flexed backwards or forwards to break the odontoid process. The only practical deduction to be drawn from these cases is the necessity that perfect rest should be observed, and that a long time should elapse before a patient, who has received an obscure injury of the cervical region, should be permitted to support the weight of the head on the spine. Had Dr. Parker's case submitted to restraint it is quite possible the broken bone might have united, and the patient lived as long as in the present case."

ART. 109.—*On a Simple Mode of Removing Foreign Bodies from the Gullet.*

By Mr. ——.

(*Medical Record of Australia*, April 30, 1863.)

The plan proposed by our anonymous writer may be said to be the same as that adopted for extracting pieces of cork from bottles, the only difference being that the ends of the wire are bent outward and upwards, instead of being turned in, and in place of a wire ring to compress the prongs, a large sized catheter is passed down to their extremities, which, when the wires are passed beyond the obstruction, is drawn up to allow the prongs to expand. The instrument is made in the following manner:—Three or four pieces of elastic wire, from 20 to 24 inches long, are twisted together down to within half an inch of their extremities, the extreme ends of which are curved outwards and upwards, and carefully filed down to prevent them injuring the coats of the canal; a piece of large-sized catheter of the same length is passed down, to prevent the prongs expanding, the extremities fitting well over the end of the catheter, to admit of the instrument readily passing beyond the obstruction, without driving it deeper into the walls of the canal. If catheter tubing cannot be obtained of sufficient length, a piece of string may be attached to its upper extremity, to allow of its being drawn up, to allow the prongs

to expand. The instrument, with the prongs closed, is passed down the gullet, well beyond the piece of bone or money ; the tube is then drawn up, and the instrument with the prongs expanded, withdrawn, bringing with it the foreign body. Some difficulty may be experienced with fine, long fish-bones, from the extremities of the prongs not being able to obtain sufficient hold upon them to loosen them from their attachment to the mucous membrane, but if floss silk is passed loosely from the extremity of one prong to the other, this will be overcome. The following cases will illustrate the action of the instrument :—

CASE 1.—A servant girl swallowed a piece of the rib of a small cod fish in a spoonful of mashed potatoes. She felt something stick in her throat, and made several efforts to bring it up, but without effect. She then swallowed a large quantity of water, with the effect of carrying it lower down. She experienced pain of a pricking character, which was greatly aggravated by attempts to swallow either liquids or solids—the latter, she said, drove the bone deeper and caused her severe pain. The sensation was so severe during the night, that she was unable to sleep. At one P.M., on the second day, twenty hours after the bone was swallowed, she was unable to swallow a tea-spoonful of water, and the effort to swallow the saliva caused great pain, and there was considerable tenderness deep in the neck behind the trachea, and redness of the fauces. Efforts had been made, several hours before, to introduce a probang and force the obstruction down, but with no other effect than to increase her sufferings. The pharynx and oesophagus seemed to be in a state of spasm and inflammation. She was highly hysterical, the hysteria possessing something of an hydrophobic character—being excited by the noises in the street, and by the efforts to swallow a tea-spoonful of water. The attempt to introduce the instrument excited severe spasm of the muscles of the pharynx, she was therefore brought under the influence of chloroform. The instrument was passed down several times, but without being able to catch the bone; some floss silk was then passed loosely from the extremity of one prong to the extremity of the other, and on its being again introduced, the piece of bone was caught and brought up.

CASE 2.—A man between 40 and 50 years of age, swallowed a piece of bone in a spoonful of soup. He first felt it in the lower part of the pharynx, but it descended to opposite the second rib before it was arrested. He said that he could feel it pricking when he drew a deep breath and swallowed his saliva. Beyond a sense of uneasiness, this was the only inconvenience. He was seen within an hour of the accident. The instrument was passed down to the bone, which could be easily felt, lying across the canal ; with some little difficulty and pain, it was passed between it and the canal and then opened, and the piece of bone, which was of the diameter of sixpence, with two spine-like projections, making it about an inch in length, was readily brought away.

There is an advantage in doing without chloroform, as the surgeon has then the sensation of the patient to guide him in passing the instrument. When chloroform is used, there is risk, particularly when fish bones are impacted, in driving them deeper into the walls of the canal. In the first case, this seems to have taken place, and had the floss silk not been thought of, the bone would have been obliged to have been left, and the patient exposed to abscess of the walls of the canal, and, perhaps, also of the lung.

CASE 3.—A little girl had swallowed a curtain ring two days before the case was brought under our notice by a medical friend. Emetics had been given, without effect, and an attempt had been made to pass a probang, but

the cries and struggles of the child had prevented it. It was doubtful whether the ring had really been swallowed, the only evidence of the existence of an obstruction was an inability to swallow solids. "They returned," the mother stated, "as they were swallowed." She was placed under the influence of chloroform. When the instrument was passing down, a slight tick was heard opposite the upper border of the sternum. It was passed a short distance further, then opened, and withdrawn, and the ring was brought into the mouth.

ART. 110.—*On the Normal Position of the Epiglottis as determined by the Laryngoscope.*

By Dr. GIBB, Assistant-Physician to the Westminster Hospital, &c.

(*Beale's Archives of Medicine*, No. 13, 1863.)

This paper is based upon a laryngoscopic examination of 520 healthy persons. "In the course of my investigations," Dr. Gibb says, "I discovered that there were individuals whose epiglottis was not elevated, but naturally depressed, and had been so from birth. In other words, that it was an abnormal physiological condition, so to speak, for there was really no evidence to prove the existence of any disease past or present giving rise to it, and the interior of the larynx could not be seen but with great difficulty, from the absence of the erect position of this fibro-cartilage. Very probably if this condition has been noticed by others in the healthy, it has been set down to relaxation of the proper ligaments of the epiglottis, or to some state allied to disease. In the large number of healthy persons examined, I satisfied myself that it was not so. Many of my inspections were sometimes made on single individuals, at others on a number in the presence of a company of persons taking all indiscriminately. In this way, I have examined parties of from six to ten and twenty persons on single occasions. They included several young children of both sexes, and persons as old as sixty, and a few upwards to the age of ninety-two. I have seen the larynx in children at the first examination, and it is astonishing how well they comport themselves under the influence of example; and I may state that the vocal apparatus in the child is one of the most beautiful objects that can come under the notice of the physiologist.

"A certain proportion of the 520, that is to say, eleven per cent., had an absence of the erect position of the epiglottis, and I was enabled to determine in a few that it actually was congenital, for whilst the parent had this condition, so had the child, and yet in neither had any inconvenience that I could determine, been experienced.

"Although I have frequently examined the epiglottis in the dead as well as the living, I was not aware of the circumstance, until I read it in Dr. Türck's book on the Laryngoscope (French edition), that in the dead the epiglottis projects backward more than in the living, and the plates published in his work illustrate this, for they were taken from the dead. Dr. Türck considers it neces-

sary to remind the reader of his book that it is important for him to remember, that in the living individual, the epiglottis seems less strongly projected backwards, and that in consequence, the interior of the larynx can be seen more readily than in the dead ; and this he had confirmed by numerous laryngoscopic observations made upon the dead.

" This fact renders my own observations only the more important, for the depressed condition of the epiglottis occurring as a natural state, produces such alterations in phonation, and such inconveniences in the event of disease, together with rendering the individual so circumstanced predisposed to incur serious pathological changes, that an early examination of the larynx in the young, should be a matter of necessity, as a guard against future evils, as much so indeed, as vaccination is a preventive or modifier of small-pox.

" The physiological modification of phonation, the result of backward epiglottic projection, is an absence of clear intonation, so usually heard in young persons. Vocal utterance is thicker, deeper, and more guttural in character, and as far as I could make out, the persons thus placed were not singers, unless to a moderate degree. One lady who had her epiglottis placed in the manner described, and who was not aware of it, until I discovered and explained it to her, assured me she always enjoyed fair health, but that at times her throat felt tired. Her daughter, a girl of 16, with her epiglottis precisely in the same position, was delicate when young, but I could not ascertain whether she ever had any throat derangement.

" The condition of the epiglottis in the 520 persons examined, varied much according to age and sex ; when vertical it possessed the natural shape and colour in nearly all, being modified in regard to the former in the young and the male sex, and in females up to 30, and a few upwards. Whilst in elderly, in some it was thinner, curled laterally forwards, and in colour somewhat altered to grey or drab. As an invariable rule, the interior of the larynx could be seen with greater facility in the elderly than in the young. In those again in whom the vertical position was absent, the cartilage was thinner, much thinner, flatter, and broader, and in some it appeared to excite a constant secretion of mucus between it and the sides of the glottis, with which it was in contact. As compared with the vertical, even in the young, it had not the plump and thick appearance which is so striking in the vertical. In one instance of nearly horizontal position in a lad of 18, who was the subject of fissure through the soft and hard palate, it possessed the natural appearance and thickness, and was itself slightly fissured.

" The attenuation of the epiglottis in these cases is, I think, sufficiently explained by its exposed position, and arrest of action ; it resembles a muscle that has become wasted from the want of use, or the absence of any power to excite it to contraction ; and in the event of disease, we can imagine the further risk to which it is exposed, not to say that from injudicious topical medication.

" We will suppose, for an instant, that a person is being treated for a throat malady, with the epiglottis lying almost flat upon the glottis, and that without making an inspection of the parts, a

sponge probang is introduced with the intention of passing into the larynx. What would be the effect of such a proceeding upon the person undergoing the operation? The glottis would be almost completely closed by the pressure of the sponge upon what is here the upper surface of the epiglottis, and suffocation is for a short time imminent. Of several instances which have come under my immediate observation for diagnosis, this condition of the epiglottis obtained, and the sponge probang had been introduced several times before the persons came to me, whose glottis had never been inspected by the laryngeal mirror, and their sufferings during and after the operation were described as being severe in the extreme. Not only is their misery augmented in undergoing this infliction, but the upper or interior surface of the mucous membrane covering the cartilage, and most likely the cartilage itself, is severely injured.

" My present belief is, that if this position of the epiglottis has resulted from disease, there is a possibility of rectifying it, but if it is a normal congenital peculiarity, then I am afraid it is almost irremediable, as the ligaments and muscles attached to it are so arranged that it is next to an impossibility to alter them, until further light has been thrown upon the subject."

Dr. Gibb's general conclusions are these :—

" 1. Physiologically speaking, the epiglottis is vertical in the great majority of mankind; in a certain proportion it is oblique or transverse.

" 2. The evils likely to arise from the latter at present appear to be so inconvenient, that it would be desirable that an inspection of the glottis should be made in every child where practicable, between the ages of four and ten years, for the purpose of ascertaining its correct position.

" 3. If it is found to be not vertical, a knowledge of the fact will prove beneficial through life in guarding against evils likely to arise during the prevalence of epidemic sore-throat, or other diseases likely to involve the larynx.

" 4. No interference with the throat or larynx should ever be permitted without the aid of laryngoscopic inspection.

" 5. Whilst any imperfection in the voice or speech may be explained by the position of the epiglottis, independently of the vocal cords, a chance for the improvement of both is held out, by adopting some means that shall render this valve more oblique in direction than transverse, or possibly (but at present very doubtful) restore it to a vertical position."

ART. III.—On the Treatment of Hoarseness and Loss of Voice by the Direct Application of Galvanism to the Vocal Cords.

By Dr. MORELL MACKENZIE, Physician to the Dispensary
for Diseases of the Throat.

(*British Medical Journal*, September 23, 1863.)

For the purpose of applying galvanism directly to the vocal cords, Dr. Mackenzie has contrived a very simple and efficient instrument,

and with its assistance he has several times succeeded in curing cases of long-standing aphonia which had obstinately resisted the ordinary external mode of applying galvanism. In his paper he gives the particulars of sixteen of these cases.

"The operation," says Dr. Mackenzie, "requires but little skill on the part of the operator, and still less fortitude on the side of the patient. Whether magnetic or chemical electricity be employed is not a matter of any importance.

"To employ magnetic electricity properly, an assistant is required to turn the electric machine with one hand, and with the other to hold one sponge against the side of the neck, either over the situation of the pneumogastric nerves, or directly on the thyroid cartilage. The operator should hold the laryngeal mirror with the left hand, and with the right introduce the laryngeal galvanizer below the epiglottis. He now touches the spring on the upper part of the instrument with his index finger, and the current passes directly to the cords.

"The woodcut shows the instrument very well; and it can be seen that the current does not pass beyond the metal ring (B) till the operator touches the ivory handle (1), when the spring (s) connects the two rings (A and B); and the current then passes on to its destination. The irritation of a foreign body in the larynx causes the vocal cords to become tightly approximated, and thus it renders it easy to touch their upper surfaces. By placing the point of the laryngeal galvanizer on the arytenoid cartilages, both branches of the pneumogastric may receive the electric impression.

"In conclusion, I may observe that I have employed galvanism to the larynx in more than thirty cases, and that no bad effect has ever followed its use. Most patients feel the electric action more acutely externally than in the larynx, though some have told me that they felt an agreeable sensation of warmth passing down from the larynx to the serobiculus cordis. Others, again, have described a choking and pricking sensation in the throat.

"The success attending the application of galvanism to the cords in aphonia will depend entirely on the proper selection of cases suitable for treatment. The absence of any structural disease or inflammatory changes, on the one hand, and a state of impaired innervation on the other, are of course

the features which promise the most satisfactory results from this method of treatment."

We give one case in illustration:—

CASE.—*Loss of Voice, of Three Years' standing, cured by Eight Applications of Galvanism internally; a hoarse Voice returning after the Fourth Application.*—Miss Kate H., aged 26, consulted me in March, 1863, for loss of voice. The young lady looked rather delicate, if not sickly; but did not complain of weakness. She was of a cheerful disposition, and did not appear in the least degree hysterical. She informed me that, in April, 1860, she took cold, had an ulcerated sore-throat, and lost her voice. She afterwards wrote me a more detailed account of her aphonia, which I shall give as far as possible in her own words. "After recovery from the sore-throat, the voice did not return; and in October, 1860, her regular medical attendant applied caustic twice to the throat, but without any effect." She then consulted some of the leading London physicians, and, among others, Dr. Walshe, who clearly recognised the nervous character of the disease, and "recommended galvanism to be applied, first by one of Pulvermacher's chains, and afterwards, if that did not succeed, by means of a battery. Neither produced any effect." This distinguished physician then "strongly urged her to leave it to nature, which she did till April, 1862, when she had the throat painted with iodine, with no other result than making it very sore on the outside." In May, another eminent physician prescribed "zinc pills, which were taken three times a day for a month, without any result. In June, 1862, Dr. Blandford met Dr. Czermak, to examine the throat with the laryngoscope. Galvanic shocks were strongly advised;" and, in the following November, Miss H. placed herself under a physician who has paid especial attention to medical electricity. "He applied galvanism every day with a metallic brush, and afterwards in a stronger form for a fortnight. All this time there was not the least return of the voice."

Miss H. applied to me in March, 1863; and, in making a laryngoscopic examination, the vocal cords were seen to be very pale and narrow, as if atrophied. On attempted phonation, they approximated well, but still were distinctly relaxed; and the upward bulging towards their centres was quite perceptible.

I at once applied galvanism to the cords, by means of my "laryngeal galvanizer." The operation was repeated every two or three days; and, after the fourth application of the electro-magnetic current, the voice returned. It was very gruff at first, and "came and went;" so that, though the young lady recovered her voice one evening, when she came to tell me of her good fortune the next day, she was unable to produce a sound. Gradually the voice became more constant, though its monotony was very striking; every syllable and every sentence was produced in the same tone, with an entire absence of expression. After the larynx had been galvanized altogether eight times, the voice was completely restored, and perfect as regards modulation. The laryngoscopic evidence of relaxation of the cords disappeared after the third application of galvanism.

Many people would consider this case an example of hysterical aphonia; but I must again repeat, that the patient never showed a single hysterical symptom. Being anxious to investigate the case thoroughly, I wrote to Dr. Alfred Tapson (of Gloucester Gardens), the regular professional adviser of the young lady, and he kindly replied as follows:—"Miss Kate H. has been a patient of mine for a good many years, and I well recollect her illness in 1860. She suffered from intense headache, a remarkably quick pulse, and total loss of appetite, attended with great prostration, emaciation, and loss

of voice. *She had no hysterical symptoms.* Dr. Todd saw her several times, and was quite puzzled what to make of her symptoms. We both had some suspicions that she might be going to have tubercle in the brain or elsewhere. She gradually recovered her health and strength, but never her voice (though I and a good many others tried all we could think of.) She gave everything a fair trial, being most anxious to regain her voice."

I have entered somewhat minutely into the history of this case, because I was anxious to show that it was entirely free from hysteria, and that the aphonia was dependent on profound disturbance of the nervous system. There were, as Dr. Tapson says, "intense headache, a remarkably quick pulse, and total loss of appetite, with great prostration and emaciation." It is scarcely necessary to observe that such symptoms imply impaired innervation of the most extreme form.

Galvanism was clearly indicated in this case. Dr. Walshe from general investigation, and Dr. Czermak from special examination of the larynx, both recommended electricity. External electricity was vigorously employed by an experienced galvanist, "without the least return of the voice." Electricity applied directly to the vocal cords succeeded rapidly in restoring the voice, which had been completely lost for three years. No comment on the superiority of the internal method of employing galvanism is required.

ART. 112.—*On the Performance of Tracheotomy in Children.*

By M. GIRALDES.

(*Bull. de Thér.* ; and *Medico-Chirurgical Review*, July, 1863.)

M. Giraldes is of opinion that the rules laid down for this operation in surgical treatises are not explicit, and that the great variety of instruments which have been proposed tends rather to increase than to remove difficulties, and to confuse the mind of the operator. Ingenious in their construction, they seem capable of fulfilling every indication, and of enabling hands, however inexperienced, to perform the operation without much difficulty. Most of these inventions testify rather to the ingenuity than to the experience of their constructors. For its rapid execution, tracheotomy requires none of these special instruments—a convex bistoury, slightly pointed, a dilating forceps, and two blunt hooks, constituting all the necessary apparatus. The canula in croup is indispensable. The following rules for the operator may be laid down:—

1. *The position of the patient and assistants.*—This is a very important preliminary, embarrassment and difficulties sometimes resulting from the faulty manner in which the patient has been placed and maintained. The child should be laid on a mattress placed upon a table, having his neck supported by a bolster, and his head thrown forcibly backwards, an assistant kneeling down behind, supporting it firmly in this position by placing his hands over the jaws. Another assistant should fix the shoulders so as to prevent the slightest movement. The patient is thus maintained immovable, and there are none of the oscillations of the trachea which various instruments have been contrived to prevent.

2. *The operation.*—The operator, standing on the right of the patient, carries his incision three or four millimetres in length from

the cricoid cartilage, rapidly, but without precipitation, as deep as the thyroid gland before it becomes necessary to stop and sponge away the venous blood. The forefinger is then passed into the wound and fixes the trachea, its nail serving as a conductor to the bistoury with which the puncture in the trachea is made. Without removing his nail from the wound in the trachea, the operator slides in the dilating forceps along it, and by a slight pressure secures enough dilatation for the admission of the canula. The child should now be set upright, in order to facilitate the expulsion of false membrane or blood from the air-passages. The end of the canula should be carried directly to the bottom of the wound, in order to prevent its sliding off in front of the trachea. Before securing it, the fact of its entrance into the air-passages must be carefully ascertained. The aperture in the trachea ought not to be of too large an extent, and even if it be made too small it may be easily enlarged by means of a probe-pointed bistoury. During the operation the child should be well covered, and carefully protected from all chills.

3. *Accidents during the operation.*—The sliding of the canula in front of the trachea has already been adverted to. Haemorrhage usually ceases when normal respiration has become established naturally or by artificial means, such as frictions or taps of the thorax, made with the view of regularizing the play of the respiratory muscles. The haemorrhage almost always proceeds from veins, which are sometimes numerous and distended; and when the incision has been carried to a great extent, so as to approach the sternal *fourchette*, there is a great probability that numerous and voluminous venous trunks may have been opened. If the bleeding persist, rounds of agaric, dipped in Commander's balsam, should be applied.

When the blood bubbles up by the side of the canula, the wound of the trachea has been made too large, so that the blood gets entrance during inspiration. A larger canula should at once be substituted. When the operation has been a laborious one, *emphysema of the neck*, sometimes extending to some distance, may be met with. It usually results from a want of parallelism between the cutaneous and the tracheal wounds. Ill-repressed movements of the child may have displaced the trachea, or too great a delay in the introduction of the catheter may have favoured the passage of the air into the cellular tissue. The same result may occur from the tracheal wound being too large or the canula too small. Frictions and shampooing the emphysematous region should be employed.

(B) CONCERNING THE CHEST AND ABDOMEN.

ART. 113.—*Operation for Compression of the Spinal Cord.*

By Dr. H. A. POTTER, of Geneva, N.Y.

(*American Medical Times*, January 10, 1863.)

CASE.—A. M. Salsbury, of Phelps, Ontario County, New York, while engaged in gathering walnuts, in October, 1859, fell from a tree, a distance of twenty feet, and fractured certain vertebræ in the inferior cervical region.

Three days after the accident I was called in consultation. The patient was perfectly conscious, but was unable to move any part of the body or extremities, except the hands, which he could slightly raise, but which would fall upon reaching a certain point, without the least control of the will over them. Sensation was as imperfect as the motion. The patient being a fleshy man, it was difficult to determine the exact point of injury.

It was decided I should operate, which I did, Oct. 9th, 1859. I found the spinous process of the sixth vertebra fractured and displaced, and the arch of the fifth crushed in upon the spinal cord, nearly separating it longitudinally. With some difficulty I removed all that portion comprised in the lamina and spinous process of the fifth and the spinous process of the sixth cervical vertebrae. The sheath of the spinal cord was entire, but, as before stated, the cord itself was much injured.

I did not see the patient again until the following January, at which time the wound was nearly healed, and he was as comfortable as could be expected; he could sit in an easy chair, could readily move his head, and could converse as freely as any one. He had gained very little from the operation—sensation and motion being as imperfect as when first injured, except that he could use his left hand a little more freely than before. He remained in this unhappy condition until Nov. 29th, 1862, when I was again called to see if something might be done to relieve him. During the past three years there had been some spasmodic action of the lower extremities, and thinking that some compression might still exist—which, from the stout and fleshy condition of the neck, had escaped detection in my first examination—and as the situation of the patient could not be made worse, I determined upon another operation, which was made in the presence and with the assistance of Dr. Dox, of Geneva, and Dr. Carpenter, of Phelps.

I removed the fourth, sixth, and seventh cervical vertebrae, which left the portion of the spinal cord covered by the four inferior cervical vertebrae entirely exposed. The cord had not united, but at the point of the first operation it was well protected by a thick substance, resembling the coat of a large artery. At least an inch of the superior portion of the exposed part was much flattened and thinned, but the sheath was entire. At the connexion of the first dorsal vertebra the cord was full, and, to all appearance, in a normal condition. There was no pulsation at any point exposed, but there had been at the first operation; and, in my judgment, the pulsation of the cord will determine very correctly the diagnosis as to the extent of the injury. In two cases upon which I had previously operated, the cord could not be only felt, but the *pulsation could be distinctly seen*. In both cases it was simply the yoking in, as it were, of the arch of the vertebra upon the spinal cord—the cord not being in the least separated. The first case was of five months' standing, and was the most perfect instance of paralysis and loss of sensation I have ever seen. A report of the same may be found in the *Journal of Medicine and Collat. Sciences* for March, 1844. It was, I believe, before the time of chloroform, and sensation returned instantaneously upon removing the compression, and a perfect recovery was effected. The other case I did not report. The patient was a coloured man by the name of Suscy. The operation was performed at Geneva, New York. I removed the posterior portion of the three inferior cervical vertebrae, and found the cord had simply been pressed against the body of the spinal column; the cord was not separated, and pulsated freely. I had great hopes of his recovery, but he died the fourth day. An autopsy showed fracture of the left parietal and occipital bone. A large clot of blood was also found around the foramen magnum, which was beyond doubt the cause of his death.

The last operation upon M. Salsbury has as yet proved of no benefit to him, and it probably never will, as nearly all connexion with the brain is obliterated.

There are two points I wish to call the attention of the profession to in connexion with this class of injuries. The first is, that, in all cases which have come under my notice, and I have seen eight, *when blood is taken from a vein of the arm it is arterial*. This being true, the change from arterial to venous blood must be dependent upon the cerebro-spinal action of the nervous system, and it is not absolutely necessary for the change to take place in the passage through the system.

The second point is, that, immediately after the receipt of the injury, the patient begins to lose flesh, and during the first few weeks becomes much emaciated. Arriving at a certain point the recuperative powers of the system seem to rally, and nutrition appears perfect—the patients gain flesh in about the same proportion as it was lost.

Why is this, and what is the cause of the suspension and restoration of nutrition? My own opinion is, that suspension of nutrition is *in consequence of the loss of the nervous action*.

But what restores it? It cannot come from its original source, for the cause is not removed, and there is no sensation or motion below the injury, and no direct communication with the brain.

ART. 114.—*Recovery after Transfixion of the Thorax by an Iron Bar.*

By Dr. C. W. HOYLAND, Surgeon-Superintendent of the British Seaman's Hospital, Constantinople.

(*British Medical Journal*, December 13, 1862.)

CASE.—Macknesky Leon, aged 25, a Pole, was employed in the hold of the Liverpool steamship *Sicilian*, discharging bar iron; and while he was in a stooping position preparing to sling a bundle for hoisting on deck, a bar from the one preceding slipped from the slings, and, descending end on, pinned him to the flooring of the hold, penetrating the wood to the extent of three inches, and requiring the united efforts of three men to extract it. The bar was of angular iron, an inch and a half square, and about fifteen feet long. The wounds were dressed by the captain, who simply applied pledgets of lint, steeped in compound tincture of benzoin, to the sites of injury anteriorly and posteriorly, and a roller round the chest. It was reported that considerable haemorrhage took place at the time. On reception at the hospital about an hour after the accident, Mr. Hoyland found the patient much depressed; he had a feeble, quick pulse, and some dyspncea; no cough. The dressings were not disturbed. Depression gradually subsided, and the reaction was moderate, no inflammatory or other unpleasant symptoms following. The patient was kept in a large ward, with the windows open night and day; and cold applications of a strong infusion of matico, in which a little chlorate of potash was dissolved, were employed. He did not micturate for the first twenty-four hours, and the bladder appeared quite empty. The bowels did not act until the fourth day, although castor oil and injections were administered freely. On the fourth day the bowels were evacuated freely once, and the kidneys acted regularly. On the fifth day, in the presence of Mr. J. Murphy, surgeon of Her Majesty's ship *Gannet*, Mr. Hoyland removed the dressings, found the wounds discharging freely

and granulating kindly. The same treatment was continued—viz., pledgets saturated as above. The iron had entered posteriorly between the ninth and tenth rib, on the left side, a little before the angle, traversing the thorax in an upward and slightly outward direction, and coming out anteriorly between the fifth and sixth ribs about an inch below, and slightly outwards of the nipple. There was only slight constitutional disturbance for the first few days, with slight cough, but no dyspnoea. This yielded to the antiphlogistic regimen and saline draughts, the bowels throughout being gently relaxed. He was discharged quite well on the 8th of September.

ART. 115.—*Treatment of Gunshot and Penetrating Wounds of Chest and Abdomen by Hermetically Sealing.*

By Dr. B. HOWARD, Surgeon-in-Chief, Artillery Brigade,
Army of the Potomac.

(*American Medical Times*; and *Dublin Medical Press*, October 26, 1863.)

The operation recommended by Dr. Howard is as follows:—

"All accessible foreign bodies having been removed, introduce the point of a sharp-pointed bistoury perpendicularly to the surface just beyond the contused portion, and with a sawing motion pare the entire circumference of the wound, converting it into a simple incised wound of an elliptical form; dissect away all the injured parts down to the ribs, then bring the edges of the wound together with silver sutures deeply inserted, at not more than a quarter of an inch apart; secure them by twisting the ends, which are then cut off short and turned down out of the way. Carefully dry the surface, and with a camel's hair pencil apply a free coating of collodion over the wound; let it dry, and repeat it at discretion. For greater security shreds of charpie may now be arrayed crosswise over the wound after the manner of warp and woof—saturate it with collodion, and when dry repeat the process until the wound is securely cemented over: as a still greater protection a dossil of lint may then be placed over the part and retained with adhesive straps.

"If there be a tendency to undue heat in the part it may be kept down with cold affusion; should any loosening of the dressing occur an additional coating of collodion may be applied. The sutures must not be removed until healing by first intention is complete. Should suppuration occur so as to occasion distressing dyspnoea, proceed to treat it in all respects as a case of empyema, introducing the trocar at the most dependent point, and taking special care to avoid the admission of air."

The advantages of the operation are said to be these.—

"1st. Hæmorrhage is controlled. At the worst the amount of blood lost after the operation cannot be more than would suffice to fill up the unoccupied space remaining in the pleural cavity; the elastic clot resulting, furnishing a styptic *par excellence* for the wounded vessels of the yielding lung.

"2nd. Dyspnoea is immediately relieved upon removal of the atmospheric pressure, and the restoration of the parts approximately to their normal condition. The inclosed volume of air being absorbed,

the lung is again at liberty to expand with its usual freedom, limited only in proportion to the size of the clot which may happen to be in the pleural cavity.

"3rd. Suppuration, if not prevented, is greatly diminished by shutting out the constantly renewed currents of atmospheric air, and its character is very favourably modified. Indeed, if the wound were closed soon enough, I deem it possible that the slough of the track through the lung, with the limited amount of attendant pus, might be entirely disposed of by absorption and expectoration. The operation which I practise is by hermetically sealing."

As to results, Dr. Howard says:—

"My first experiment in hermetically sealing was in a bayonet wound of the abdomen in a private of the 18th U.S. Infantry in 1861, which was followed by the best results. Since then I have deemed it the most eligible treatment for gunshot and penetrating wounds of closed cavities when not contra-indicated by serious complication. In incised or punctured wounds the paring process is of course dispensed with.

"Practically the immediate results have been very remarkable, and I think unprecedented. The most painful cases of dyspnœa have been promptly relieved, the patient usually falling into a quiet slumber in about an hour after the operation. The subsequent results, also, so far as I have been able to continue the treatment, have never disappointed my expectations. I have obtained healing by first intention, and removed the sutures within five days after the operation."

ART. 116.—Case in which the Sac of a Spina Bifida was Successfully Removed by Operation.

By Dr. WILSON, of Clay Cross.

(*Proceedings of the Pathological Society of London; and Medical Times and Gazette*, January 17, 1863.)

The following account was read, and the sac exhibited, at a meeting of the Pathological Society. The case is the first successful one of its kind in English practice, all others, and these not a few, having ended fatally. In fact, the operation is so pregnant with danger, that this case is not here put on record with a view to recommending its adoption in other cases:—

"The child from whom the sac was taken was a fine, and, in other respects, well-formed boy, the first child of young parents. The tumour was pyriform, the size and shape of a ten-ouncee necked cupping-glass. It hung from the upper dorsal region of the spine, was flaccid, and only partly filled with fluid; the integuments over it were very thin, indeed, translucent, and over the most prominent part of the swelling were two small excoriations. At the base of the tumour could be felt a deficiency in the bones beneath, corresponding with the third and fourth dorsal vertebrae. There was no paralysis or other symptom of deficiency of nervous power. From

the time of birth Dr. Wilson applied pressure to the base of the tumour, so as to isolate it from the spinal canal as far as possible. To relieve the tension of the integuments which had become extreme, on the twentieth day after birth it was punctured, and eight ounces of fluid were drawn off. During the next twelve days it was tapped four times, each time about two ounces of fluid being drawn off. A steel clamp was applied to the base for five days before removal, and, on the thirty-third day, the sac and integuments were shaved off at the base of the tumour, which was grasped by a pair of circumcision forceps. The cut edges of the spinal membrane were lightly touched with a red-hot needle, sutures were applied to the wound, and pressure to the base of the tumour. Twenty days after the operation the wound had entirely healed. Two months after the operation the chink in the vertebrae was found to be closed by a solid mass which projected somewhat beyond the neighbouring spines, and appeared to be formed of bone. The sac, as Dr. Wilson says, consists of thin integuments covering the dura mater, to which it is unadherent; this is lined internally by a layer of epithelium resting on a basement membrane, coated on its free surface by a more or less organized exudation of lymph. The dura mater is quite an independent coat in this tumour, and is in no way connected with the integuments: the sac contains no nerves. The fluid in this case was situated in the sac of the arachnoid, and not, as is usually the case, in the sub-arachnoid space. The tumour was examined by Dr. Cornelius Black, of Chesterfield, by Mr. Savory, and by himself, and all coincided with Dr. Wilson in his account of its structure and connexions with the spinal membranes."

ART. 117.—*Case in which a Breast-pin was Swallowed by a Child, and passed by Stool Twenty Hours after.*

By MR. THOMAS ANNANDALE.

(*Edinburgh Medical Journal*, May, 1863.)

CASE.—One day in the month of January, 1863, a respectable tradesman in Newcastle, came to my father in great consternation about his son, who had just swallowed a breast-pin. It appeared that the child, three years of age, had suddenly begun to cry, and the father's attention being directed to the boy's throat, he saw the sharp point of the pin sticking up from between the fauces. The father made an attempt to seize it with his fingers, but failed, and the pin passed down out of sight, and caused no further inconvenience. The accident happened immediately after the child's dinner at twelve o'clock. The child had had for his dinner one or two mouthfuls of roast beef, and had partaken freely of a rice pudding. The parents were advised to keep the patient quiet, and carefully watch his stools. The child suffered no inconvenience, and next morning, about half-past nine o'clock (twenty hours after the accident happened), he had a motion from the bowels without any pain. In this stool the pin was found.

ART. 118.—*Description of a New Instrument for the Relief of Retention of Urine in Cases of Tight Strictures of the Urethra.*

By Dr. PATRICK HERON WATSON, Surgeon to the Royal Infirmary, Edinburgh, &c.

(*Edinburgh Medical Journal*, July, 1863.)

To any one conversant with the success which has in recent times attended the efforts of surgeons to relieve retention, in cases of stricture, by the employment of the common silver catheter, a proposal to increase the armamentarium of surgery by the addition to it of a new instrument, may appear very uncalled for. No doubt, the silver catheter, varying in scale from the size of a fine knitting-wire upwards is well suited in most cases to enable the practitioner to overcome the difficulties so far as the diminished capacity of the urethra at the seat of stricture is concerned ; and when contrasted with the gum catheter affords a facility of manipulation to which the latter instrument cannot pretend. Rigidity of material is thus obviously a matter of moment, conferring as it does a command over the extremity of the instrument ; so that delicacy of manipulation, combined with the requisite amount of power, is certainly attained. This rigidity in the case of the silver instrument is, however, only comparative, and becomes less and less as the size diminishes, till at length in the smallest catheter, No. $\frac{1}{2}$ or No. 1 of the Edinburgh scale, the condition of flexibility is almost attained. Nos. 2, 3, and 4 are certainly less pliant, but still they are less easily introduced than the more rigid bougies of the same size which are made of solid German-silver or steel. This fact has long been recognised, and has led generally to the use of bougies of those sizes in preference to catheters in the treatment of stricture by dilatation. While the advantage to be obtained by the use of a very small instrument, which possesses as great an amount of rigidity as possible, has led, in the Edinburgh Infirmary, for many years, to the employment of a probe-pointed German-silver bougie, made in its stem of the size of No. 3, but tapering at its point to an extremity not larger than that of a common probe. Such an instrument is more easily introduced into the bladder where a tight stricture exists than even a No. 1 bougie of uniform size, the tapering point enabling the instrument to be guided through the constricted portion with precision ; and thus to permit the thicker part of the stem with the greatest facility to follow up the slender extremity. When introduced it dilates the stricture, so that a No. 2 or 3 will easily pass without experiencing any obstruction. I have therefore on many occasions found it preferable, when foiled in the first attempt to pass the small-sized catheter in cases of retention with stricture, to resort to the passage of the probe-pointed bougie as a preliminary measure, following it up with a No. 2 or 3 catheter, and thus securing the relief of the patient with less delay and with much less risk of injury to the mucous membrane of the urethra than by oft-repeated efforts with a small catheter. In such cases, too, especially when there has been much

thickening in the perinæum, to secure a still greater degree of rigidity, Dr. Watson has found that Mr. Syme's stricture-staff, of the smallest size, was better suited to dilate the canal, as a preliminary to the introduction of the catheter, than the probe-pointed German-silver bougie. In a case of tight stricture with retention, he has very frequently, however, felt, after having introduced this probe-pointed bougie with no little difficulty, that, were it only hollow, and capable of acting as a catheter, a great deal of trouble to the practitioner and pain to the patient might be avoided. Following out this idea, Dr. Watson had constructed a probe-pointed stricture catheter of highly tempered steel, and of exactly the same dimensions as the German-silver stricture bougie in common use. The whole length of the instrument is $10\frac{1}{2}$ inches; its stem is hollow from the handle up to about $1\frac{1}{2}$ inch from the top, where there is an orifice: a silver wire occupies the interior of the instrument, and occludes the orifice, so as to prevent blood or mucus obstructing the channel during its introduction.

"I have now," says Dr. Watson, "used this instrument for more than a year, restricting its employment to those cases where either others or myself had previously been foiled in the introduction of a small-sized catheter, and where formerly I should have resorted to the use of the probe-pointed bougie as a pioneer to the common catheter. In every such instance I have found that the steel probe-pointed catheter was introduced with facility, and afforded the requisite relief completely,—though, of course, slowly, from the small size of the channel through which the water flowed. This instrument, I may mention, has also been employed by several friends, and in their experience has been found signally serviceable. There is but one objection to the instrument—that is, the liability of steel instruments to rust; and more particularly this might be expected to hold good with respect to the channel of a steel catheter. I can only say in reply, that during the period I have employed the instrument, I have had no reason to complain of it on this score. The only precaution I have thought it necessary to employ has been to wash it after use, and then to pass the silver wire dipped in oil along the channel. Should, however, the risk of rust appear to be a serious objection to its general usefulness—as it might in a warm climate—then the instrument may be electro gilt, so as thoroughly to protect the steel surface.

"In introducing the catheter to relieve retention, from the position of the eye of the instrument, the operator must take care that this aperture, and not merely the point of the catheter, is lodged in the bladder; else the water will come away in a very tiny and unsatisfactory stream. By passing the finger up the rectum the position of the point of the instrument can easily be determined, and when it is once in the bladder the catheter may then with perfect safety be pushed onwards, stretching the stricture by its gradually-increasing calibre till at least an inch and a half more of the stem has passed within the canal of the urethra. If the silver wire is now withdrawn, the urine will escape in a continuous free stream; and as the patient is then placed in the erect posture or sitting upon the

edge of the bed, the bladder will gradually empty itself without the assistance of any pressure over the pubes.

"The advantages to be obtained from the employment of this steel probe-pointed catheter are :—

"1st, That in it we have an instrument which, being made of steel, is thoroughly rigid, and therefore under the control of the operator ;

"2nd, An instrument which, to relieve retention, possesses all the excellence of the smallest catheter, with, from its probe-pointed extremity, all the facility of introduction presented by the probe-pointed bougie."

ART. 119.—*On the Successful Treatment of Severe Stricture of the Urethra by Gradual Distension at a Single Sitting.*

By MR. HENRY THOMPSON, Surgeon to University College Hospital.

(*Proceedings of the Royal Medico-Chirurgical Society*, April 14, 1863.)

It is the author's object to illustrate and explain a new method of treating severe and obstinate strictures of the urethra. This term is intended to denote those which are little benefited by dilatation. The distinction which constitutes its novelty does not consist in the mere production of some alteration or improvement in existing mechanical contrivances, but in the adoption of a mode of action on the stricture itself, which is different from those which characterize any of the other systems of treatment pursued at the present day. The author shows in what it differs from dilatation, simple and continuous; from rupture, or "instantaneous treatment;" from cauterisation; and from incisions. He illustrates the proceeding, which he distinguishes by the term "gradual distension," and describes the instrument employed to accomplish it. By the process in question, the strictured part of the urethra only is acted upon, and this is not to a degree short of, but up to or even beyond, the natural calibre of the canal, wherever the stricture may be situated. All this is accomplished at one sitting, but with gentleness and slowness, so as to avoid unnecessary rupture; the degree of distension being regulated with absolute certainty, and its extent indicated with extreme accuracy, by apparatus in the handle of the instrument employed. The object of the operator is not to rupture, but to over-distend the fibrous tissue which constitutes the stricture, so as to destroy, or, at all events, to impair its natural tendency to contract. He aims at attaining that result which occurs from the practice of over-distending vital tissues elsewhere—viz., to impair or destroy their contractility. This is known to happen after the application of over-distension to both healthy and morbid tissues, and is turned to account by the surgeon for that purpose. The class of patients for which this proceeding appears to be best adapted is described, and illustrative cases are appended. The instrument consists of two long and narrow steel rods, accurately applied throughout their entire length by the single plane surface which each possesses.

The external surface of each rod is convex, so that together they form a nearly cylindrical instrument, but tapering towards the lower extremity, where they are closely united. At the opposite or upper end they are also united, and are surmounted by a handle resembling that of an ordinary sound. This handle is attached to a screw with a very fine thread, which being turned causes the two rods to diverge very slowly and very gradually from each other at a given spot, about six inches from the handle. When the separation of the blades is effected, an index placed near the upper end, and connected with some numerals on a disc, shows the exact degree of extension made by pointing out that number of the catheter scale to which the distension existing at that moment is equivalent. The general form and contour of the instrument is that of a slightly curved catheter. When the screw handle is turned, the two rods separate, so as to form a long oval or spindle-shaped figure, the long diameter being about three inches and a half or four inches in length, and the short diameter corresponding to the number of turns given to the screw, and varying between the slightest possible separation of the rods and an interval of about three-eighths of an inch, or even more. The stem of the instrument has marked on it a graduation in inches, which commences one-quarter of an inch below the point of maximum distension or centre of the spindle-shaped figure produced by the separated rods. It is that point which will correspond with the stricture when the instrument is placed in the urethra, so that the contracted portion of the canal undergoes the greatest amount of distension which it can be desired to produce, while the rest remains wholly unaffected. The mode of applying the instrument is as follows :—A medium or full-sized bougie or catheter is first passed as far as to the stricture, and the distance from it in inches to the external meatus carefully noted. Suppose it to be five inches, the operator, taking the distending instrument, places the little blue steel collar which slides on its shaft opposite to the figure 5, and passes the instrument through the stricture until the collar arrives at the meatus of the urethra, and prevents the instrument from entering further. The maximum point of distending power must therefore correspond with the narrowest part of the stricture. The act of distension is now commenced by making two or three turns of the screw-handle, and is continued by slowly turning it once every half minute, taking care at the same time to prevent the instrument from shifting its position, by observing that the collar remains opposite the external meatus. In a short time the index, gradually rising, shows that the calibre is reaching Nos. 10, 11, 12, and so on, until in a few minutes No. 14 or 16 has been reached, which latter limit is usually quite sufficient. The screw-handle is now slowly turned backwards, not the whole way, but until the index has retreated to about No. 8 or 9, when the instrument is withdrawn. The operator next passes a full-sized gum catheter into the bladder, and fastens it there, leaving it in place for about twenty-four hours. It is then removed altogether. All that remains to be done is to pass a full-sized metallic instrument every second day for a week, and after that at increasing intervals for a week or two longer.

ART. 120.—*On the Treatment of Incontinence of Urine.*
By MR. ROBERT JOHNS.

(*Dublin Medical Press*, April 29, 1863.)

The point of interest in these cases is the fact that the disorder yielded to very simple surgical treatment, after persistent resistance to all medical treatment.

CASE 1.—Some years since a medical friend sought my assistance under the following circumstances: Mrs. B. sent for him, and stated that she should be obliged to get rid of her housemaid, whom she highly prized, unless he could cure her of an infirmity from which she had been suffering for upwards of a year, which was not only highly detrimental to her property, but most distressing to the girl herself. She was a strong, robust, healthy country girl, aged 25 years, of a plethoric habit, and was unable to retain her urine at night, which commenced to flow off involuntarily as soon as she became warm in bed, and continued to do so incessantly until she rose in the morning. My friend employed assiduously for two months every known treatment, but without the least benefit to his patient. He could not assign any cause for her malady, none of those laid down by writers having existed. However, on inquiring more particularly from herself, I discovered that about fourteen months previously she had had a bad fever, during which, on several occasions, her urine was retained, and on each was passed off by means of warm fomentation, but that the retention had eventuated in her then present complaint. I then recommended that a metallic catheter should be introduced each night into the bladder, and there retained for a quarter of an hour. At the expiration of a week from my visit, the doctor informed me that his patient was quite well, the catheterism having removed the incontinence, some benefit having resulted to her after the first introduction of the instrument.

CASE 2.—During the winter of 1861, Mrs. B., aged 30 years, of a strumous diathesis, called upon me, and stated that she could not retain her water for a minute, but that she was always worse at night, when she became warm in bed. She was the mother of one child (a male), which was still-born after a very tedious labour, requiring the use of destructive instruments for its completion. About the fourth day after the birth of her child her water began to pass off involuntarily, and had continued to do so for some years, but that about six months before her visit to me she had been cured of a very bad vesico-vaginal fistula (after six plastic operations) which had originated the incontinence. Having found on examination per vaginam and by the catheter, that the urethra and neck of the bladder were rough and highly irritable, every second day for three weeks I passed a metallic instrument into the bladder, and retained it there on each occasion for from ten to fifteen minutes, at the same time giving her each night a pill containing half a grain of extract of belladonna and four grains of dried soda. Under this treatment her distressing complaint was removed, and at the termination of the period just stated she was able to retain her urine as well as ever she did at any time of her life.

CASE 3.—On the 28th of December, 1862. I was brought some distance from town to see Miss M., a young lady, 13½ years old, who had only a few days returned from school, and had caught cold in travelling. I found the pulse quick, weak, and compressible; the tongue foul, covered with a whitish fur; the tonsils swollen, inflamed, and of a brick colour, with specks of diphtheritic exudation here and there on them, as well as on the soft palate. For a couple of days previously she had been complaining of chills and other feverish symptoms. At this visit she was also suffering very

much from scalding and soreness of the genitals, consequent upon a dribbling away of her urine, which she had been unable to retain for a minute during the five preceding days. Her person and room were strongly impregnated with the urinous smell so common in such cases, and which obtained in the two former. Her throat was then well washed over with a strong solution of nitrate of silver, a gargle, consisting of dilute muriatic acid, chlorate of potash, honey of borax, and decoction of barley, was frequently used, the vapour of boiling water with vinegar was inhaled, and a mixture of infusion of bark, chlorate of potash, and tincture of the sesquichloride of iron was given every third hour, together with a liberal allowance of beef-tea and wine. For the soreness of the genitals fomentations of chamomile flowers with poppy-heads were employed, and followed by a lotion of subacetate of lead, at the same time strict attention to cleanliness being enjoined. Under this treatment the affection of the throat was removed, and the irritation at the vulva was lessened; but as the incontinence still persisted, the tonic mixture was continued, and cold bathing was ordered. On the 7th of January, as she exhibited some signs of incipient pertussis, from which her sisters and brothers were then suffering, she was ordered a stimulating embrocation for the chest, and an expectorant mixture, with the addition of liquor potassæ and extract of belladonna, the former treatment having been suspended. After a few days she fancied the incontinence was somewhat less, yet, although the medicine was given more frequently, no real benefit accrued. On the 22nd, as the pertussis was fully established, which increased very much the annoyance from the urinary complication, her mixture was changed for one consisting of tincture of cantharides, camphorated tincture of opium, syrup of bark, and syrup of orange-peel, but the liniment was repeated. On the 8th of February I was hurriedly summoned to see her, as she was suffering great pain in the genitals, which, on examination, I found to have been caused by an abscess in the right labia, which was at once opened with a lancet, and healed in a few days by linseed-meal poultices. Although the pertussis had been completely removed, yet, as the incontinence still obstinately remained, the bark and cantharides were given more frequently, and a blister was applied over the bladder, but without any better effect. On the 11th, having found that matters had not in any way improved, I passed a small-sized silver catheter into the bladder, and kept it there for ten minutes, when it, together with about an ounce of urine, was expelled with force into the bed-pan. On the following day she expressed herself as being much better; however, the catheter was again employed as before, and with the same happy results. On visiting her on the next day, she said she was quite well, and could retain her water for any length of time, and as well as she did at any period of her life, which salutary condition has continued up to the present. In the following way, according to her own statement, this distressing complaint originated: Having been at school about 100 miles from Dublin, she left for home for the Christmas vacation very early in the morning of the 23rd of December, and did not arrive at her father's house until very late that evening, not having passed water during the entire day, although on several occasions having had a desire to do so; but as she was unaccompanied by a female friend, she was ignorant how to act, and after some time all the inclination to incturate passed off. On her arrival in Dublin she essayed to empty the bladder, but without success; yet, after several trials, she effected her object at the end of two hours. On the following day on rising she first became sensible of the incontinence, which had been continuing during the night, and which persisted, as already stated, up to the 12th of February.

ART. 121.—*On Tubercular Disease of the Urinary Organs.*

By DR. KUSSMAUL.

(Würsburger Med. Zeitsehr., Bd. iv. Heft 1; and British Medical Journal, March 21, 1863.)

Tuberculosis of the urinary apparatus, Dr. Kussmaul observes, may occur as a part of general tuberculosis, manifested either in the acute or in the ordinary chronic form. In general, the deposit is limited to the cortical substance of the kidneys; the secreting tissue being capable of performing its function, and becoming only hyperæmic and ecchymosed when a copious tubercular deposit suddenly takes place; the affection being attended by catarrh of the urinary passages. In very rare cases, the tubercular deposits become confluent, and form, by softening, small caverns in the substance of the kidney; and still more rarely, the morbid process extends to the urinary passages, causing ulceration and thickening.

Of greater clinical importance than the manifestation of urinary tuberculosis as a part of a general affection, is a class of cases, much more rare, in which tuberculosis of the mucous membrane of the urinary passages appears either as a primary affection, or extends to the bladder and urethra, generally from the seminal passages, but in exceptional cases from the prostate.

Tubercle of the male genital organs is generally primary, and its extension to the urinary organs is either limited to the bladder or to the bladder and urethra, or extends on one or both sides to the ureter and pelvis and calices of the kidney, sometimes even attacking the renal structure itself. In primary tubercle of the urinary passages, on the other hand, the degeneration generally proceeds from the calices of the kidney to the bladder; but both the renal calices and the bladder may be independently affected; or the bladder may be the starting point of the degeneration.

In women, the combination of tubercular disease of the urinary passages with tubercle of the genital organs is as rare as it is frequent in men. Dittrich, in forty-five cases of tubercle of the genital organs in women, observed it once to be combined with tubercle of the urinary apparatus. In this exceptional case, there was extensive tubercular ulceration of the urethra—perhaps, Professor Kussmaul thinks, the only recorded instance of tuberclosis of the female urethra. As a rule, then, tubercle of the urinary passages in women is primary, while in men it has generally first appeared in the genital organs.

Phthisis of the urinary passages seldom attacks the entire urinary apparatus, but is generally limited to particular points. As has been shown by Rayer and J. F. Meekel, one kidney may be extensively diseased, while the other, with its ureter, is quite or nearly free from tubercle and performs its function. This explains the infrequency of uræmia in phthisis of the urinary organs.

The kidney may be so far destroyed by the confluence and softening of tuberculous deposits, and the tubercularization of the products of diffuse nephritis may advance so far, that scarcely any part of the gland remains beyond the thickened capsule.

SURGERY.

The tubercular kidney is generally enlarged; sometimes it is of its normal size, or even smaller. Professor Kussmaul has seen a case in which it was as large as a child's head; the patient was a female servant. Such a great enlargement always arises from the distension of the kidney and its pelvis and capsule by retained urine and pus, if the ureter be narrow or frequently and for a long time obstructed. Moderate enlargement may be ascribed to inflammation of the parenchyma of the organ, preceding the deposits of tubercle.

As more rare conditions under which tubercle of the urinary passages is met with, Dr. Kussmaul refers to the following. Dr. Basham saw, in one case, a fistulous communication between the bladder and rectum. Lundberg has described a case in which the renal purulent collection broke into the abdominal cavity. Passavant describes an instance where the *trigone* of the bladder was destroyed by tubercular ulceration.

Phthisis of the urinary passages is a very rare disease. Willigk has arranged in order, according to the frequency in which the disease was found in them, the organs in which tubercle was observed in 1317 cases. The order is as follows: lungs, intestines, mesenteric glands, larynx, lymphatic glands, peritoneum, spleen, kidneys, pleura, liver, air-passages, bones, genital organs, brain, cerebral membranes, urinary passages, pericardium, stomach, tonsils, skin, muscles, tongue, pharynx, oesophagus, pancreas, and heart. The kidneys thus occupy the eighth, and the urinary passages the sixteenth place. Among the 1317 cases of tubercle, the kidneys were affected in 74, or 5·6 per cent.—viz., in 44 (or 5·8 per cent.) of the men, and in 30 (or 5·3 per cent.) of the women; while the urinary passages were tuberculous in 12 cases only, or 0·9 per cent.—viz., in 7 men and 5 women.

Tubercular disease of the urinary passages is observed at all ages; but rarely before the tenth or after the sixtieth year. Ammon saw it in a female child aged $3\frac{1}{2}$ years, the left kidney being enormously enlarged; and Dittrich saw a man aged 71 with tubercle of the bladder, ureters, and kidneys, the disease having extended from the genital apparatus.

The diagnosis of the disease, according to Dr. Kussmaul, depends on the following phenomena and circumstances:—

1. The patients become rapidly emaciated. This emaciation depends on hectic fever; on the discharge of pus and frequently also of blood with the urine; on night-sweats; on disturbances of the digestive function; and occasionally on diarrhoea, which does not necessarily depend on tubercle of the intestines.

2. There are symptoms of chronic inflammation and ulceration of the urinary passages. Among these, as direct results of inflammation and ulceration, are burning, heavy, and dragging pains, generally severe, but varying in intensity in the bladder, in the course of one of the ureters, and in one or the other loin, corresponding with the extent of the tuberculous inflammation. Pressure on the vesical region, or below the false ribs according to Christensen, may increase the pain. The pain in the inflamed bladder is increased in micturition; there is urgent desire to pass urine, and sometimes

even incontinence. Ammon noticed pain in the leg of the affected side in a lad aged 19; König has noticed numbness of the thigh.

Another symptom is the discharge of blood and especially pus with the urine. Sometimes the discharge of blood appears first, and that of pus at a later period. Frequently a purulent deposit only is observed; and in a case described by Rayer, blood alone was discharged by a patient suffering from tubercle of the genito-urinary apparatus. In a case described by Christensen, the urine at the commencement of the disease was clear, but contained albumen. The urine has been observed to be sometimes acid, sometimes alkaline. The fluid may remain clear in spite of ulceration of one kidney, if its ureter be obstructed by any cause, and the mucous membrane below the obstruction remain healthy.

The epithelium of the bladder may be thrown off extensively, and discharged either in single scales or in large flakes. Epithelial casts of the renal tubules may also be occasionally discharged with the pus.

Elastic fibres, granular *detritus*, and shreds of cellular tissue may be discharged with the urine. This discharge denotes deep-seated loss of substance of the mucous membrane, but does not absolutely denote tuberculous ulceration, unless it be of long duration.

The presence, to the naked eye, of larger or smaller cheesy-looking deposits, together with the discovery by the microscope of tubercle-corpuscles insoluble in acetic acid, with granular *detritus* and elastic fibres, render the existence of tubercle very probable, inasmuch as these cheesy-looking products are rarely observed except in tubercular ulceration.

As more indirect results of the chronic inflammation and ulceration there have been observed diminution of the urinary secretion, and the presence of a swelling in the region of the kidney. The urine may be diminished by destruction of the secreting apparatus or by obstruction of the urinary passages. Dr. Kussmaul believes, that the retention of urine on the pelvis of the kidney by the blocking-up of the ureter through the impaction of tuberculous masses or shreds of tissue increases the lumbar pain, which again decreases when the impacted mass is carried away. The absence of urea and urinary salts, observed in one case by Rigler, is to be ascribed to the destruction of the secretory apparatus. Signs of a renal tumour have been observed by Ammon, Rayer, König, and others, sometimes on the left, sometimes on the right side; but they are generally absent. In one case, recorded by Lundberg, the renal abscess opened into the abdominal cavity. The pus became enclosed in a cyst, which was punctured, after which the patient (a female) lived half a year.

3. The diagnosis is further aided by the exclusion of other causes which may give rise to chronic inflammation and ulceration of the urinary passages. In none of the cases collected and compared by Dr. Kussmaul was there gravel, calculous deposit, or *echinococci* in the urine, or any of the colicky pain which is observed in cases of calculous pyelitis and sometimes in hydatid disease of the urinary passages. The diagnosis is further grounded on the absence of

ramified fibres or of cells from the urine, denoting the non-existence of cancer; as well as on the absence of any tumour projecting from the wall of the bladder into its interior. If a tumour be observed in this situation, the larger it is, the more likely is it to be cancerous. Another point in diagnosis is, the absence of urethral stricture or of enlargement of the so-called third lobe of the prostate, which may be attended by chronic inflammation of the urinary passages.

4. There is hereditary predisposition to tubercle, or evident tubercular deposit in other organs, in the lung or testicles. Tubercular degeneration of the testicles, from which in the male sex tubercle of the genito-urinary apparatus usually extends, is readily recognised. When no positive signs are elicited by examination of the testes, an exploration *per anum* is indispensable, as the disease may have been developed from the prostate and vesiculae seminales. In many cases, pulmonary tubercle appears at an early or a late stage of tuberculosis of the urinary organs; sometimes, however, no signs of it can be discovered, even on *post mortem* examination.

Tubercular disease of the urinary passages rarely continues more than one or two years. Death is usually brought about by marasmus, terminating in diarrhoea, pneumonia, &c.; more rarely there is uræmia. Sometimes death occurs from pyæmia; or the concomitant tubercular disease of other organs.

The treatment of tuberculosis of the urinary organs is altogether confined to symptomatic and palliative measures.

ART. 122.—*On a New Application of Elastic Bands in the Treatment of Strangulated Hernia.*

By M. MAISONNEUVE.

(*Journ. de Méd. et Chir. Prat.*, October 25, 1863.)

In a recent communication to the Academy of Sciences at Paris, M. Maisonneuve cites eight cases in illustration of this procedure, of which cases we select two.

"On the 16th of July, 1863," says M. Maisonneuve, "the director of the Hôtel-Dieu summoned me at one o'clock in the morning, to the assistance of the lamp-lighter of the hospital, who was affected with strangulated hernia. I was informed that the patient, a man aged thirty-four, had for several years borne reducible inguinal hernia on the left side, for which he wore a truss.

"The truss, however, was worn out, and for a month the hernia had not been kept properly reduced, and in the evening of the 14th, during an effort, strangulation took place.

"The entire night of the 14th passed without N—— calling in any assistance; he trusted that the horizontal attitude alone would be sufficient to cause the return of the protruded bowel into the abdomen. The pain, however, persisted throughout the night, nausea and vomiting made their appearance, and the tumour acquired the size of the fist. M. Jobert then prescribed a bath of two hours' duration, to be followed by attempts at taxis, which proved entirely unavailing.

"The attempts were again repeated after the application of ice over the tumour, but without any better result. In the course of the evening, the symptoms became extremely urgent, the hernia was hard and painful, and vomiting recurred, every half hour, with intense suffering. The house-surgeons on duty opined that kelotomy could not with safety be further delayed, and I was requested to visit the patient.

"The history of the case was then related to me, and I found that the tumour was hard, renitent, and had assumed a purple aspect. I inspected the matter rejected from the stomach, inquired into the state of the pulse and the condition of the abdomen, and satisfied myself that the case was one of scrotal entero-epiplocele, that incarceration was present, that the constriction was too intense to yield to the usual means of reduction, and that two measures only afforded any chance of preserving life—viz., operation with the knife, or elastic pressure with the India-rubber band. My experience of the latter method, which for seven years I have invariably found successful in inguinal hernia, induced me to resort to it in preference to the other alternative, and I immediately applied it in the presence of the internes of the hospital.

"The patient was placed on a trestle-bed, and a linen bandage was rolled round the body. To this was secured the extremity of a long India-rubber band, four rings of which were tightly applied round the pedicle of the tumour. The hernia was then more loosely covered with the elastic roller, the compressive power being increased by the number of its turns.

"Scarcely was the operation concluded when a gurgling sound was heard, indicative of the return into the abdomen of a portion of the contents of the tumour. The latter became immediately softer, and the band having been removed, the hernia was reduced with ease. A new truss was applied, and the patient has since resumed his duties in the hospital."

In six other instances of inguinal or umbilical hernia a similar satisfactory result was obtained. In femoral hernia, however, the local condition of the protrusion is very different. M. Maisonneuve proceeded as follows in the case of a woman aged thirty-six, who was admitted into his wards on the 23rd of last July, for crural hernia, occupying the left side; incarceration had taken place twenty-four hours before, and all attempts at reduction had entirely failed.

The tumour was hard, small, and from its shape, but ill-adapted to the application of the band, and the professor therefore modified his usual *modus operandi*. A thick pad of compresses was in the first place laid over the hernia, and with the India-rubber roller, applied as tightly as possible, the kind of bandage termed *spica inguinis* was speedily constructed; the pressure was permitted to last for five or six minutes, and was then quickly removed; the hernia though not reduced was found soft and flaccid. A very trifling amount of manipulation completed the reduction, and no relapse has since taken place.

To effect the reduction of small herniæ, the base of which cannot easily be surrounded by the band, M. Maisonneuve employs in ad-

dition to the elastic roller, a kind of compressor consisting of two parts—viz., 1, a lumbar metallic plate, and 2, a pad supplied with a screw.

The lumbar-plate, lined in an appropriate manner, resembles those in use in the construction of hypogastric belts; it is strong and sufficiently wide to rest on the small of the back, and at either extremity presents a hook, to which the caoutchouc band can be secured.

The pad is analogous to that of Petit's tourniquet, slightly concave, and supplied with an endless screw shaped like a cylindrical pin, on which runs a strong metallic rod, eight inches in length, and hooked at the extremities.

In order to use the instrument, the lumbar-plate is, in the first place, applied to the loins, and the pad adapted to the hernia. An India-rubber band is then secured to each of the hooks of the posterior plate, and is brought forward and turned over the corresponding hooks of the rod attached to the pad, a procedure which is repeated as often as may be necessary to produce the required amount of pressure, the pad being at the same time carefully adapted to the tumour. The surgeon can regulate and increase at will the compressive action, by turning the screw, which causes the rod slowly to recede from the pad, and stretches the band in a corresponding degree.

This instrument, M. Maisonneuve believes, is susceptible of manifold and important applications—in the treatment of aneurism for instance, of erectile tumours, &c., but he looks upon it as more especially calculated to be useful in incarcerated hernia.

*ART. 123.—Case of Inguinal Hernia Treated Successfully
by Professor Chisholm's Method.*

By Mr. JAMES J. DICKINSON, Assistant-Surgeon, Bengal Medical Service.

(*Dublin Medical Press, August 19, 1863.*)

CASE.—The man who was operated upon was a Bhelstee, aged 30, and his history is as follows:—He was ruptured in the cold season of 1856, in consequence of slipping while descending a steep hill near Cashmere. Immediately he felt as if something had given way, and on placing his hand over his right groin, discovered a small tumour there. This gradually increased in size, took a downward direction, and ultimately descended into the scrotum. He states that from the day of the accident till within a few days of having the operation performed he has regularly pursued his avocation, and that, with the exception of one or two obstinate attacks of constipation, he has enjoyed uninterrupted good health.

When he first presented himself to me in April last, I lost no time in writing off to my friend, Dr. Bourne, to get me a needle constructed similar to the one described by Professor Chisholm; but from the time it necessarily takes to get anything made in India as compared with England, some slight delay occurred, and we were ordered to march from Segoolee to Gwalior, a distance of 500 miles. The man, however, was so anxious to have the operation performed, that he marched the whole of the way with us!

On examining him, I found he had a large inguinal hernia of the right side, which completely filled the scrotum. With gentle pressure the whole

of the gut could be easily returned ; and on pushing the flabby scrotum up before the forefinger, it could be passed through the tendinous aperture, more than an inch in diameter, into the abdomen, and the pillars of the external ring could be distinctly felt. The man himself was a spare man, though in good condition ; and I mention the fact because I am of opinion that *pari passu* with stoutness, so will the difficulty of the operation be enhanced, and so will needles of various sizes and curves be required.

On the 27th of May I performed the operation, having on the previous day given him a dose of castor-oil. After the case had been carefully examined by my friends, Assistant-Surgeon Jackson, of H.M. 13th Light Infantry, and Dr. Caird, of the Camel Corps, by both of whom I was ably assisted, I proceeded to operate, the patient being under the influence of chloroform. The mode of operating is as follows :—“The scrotum having been invaginated upon the finger, as the only mode of guiding the needle in its passage, a long strong curved needle, fixed firmly in a handle and armed with silver wire, guided by the finger, transfixes the scrotum at the apex of the invaginated portion, passes through the internal column, and appears through the skin of the abdomen, when one end of the wire is drawn out. The point of the needle is then drawn backwards, and disappears again in the canal. Its direction is then changed. Whilst still imbedded in the scrotum and guided upon the finger, its point is made to traverse the external column of the ring near Poupart’s ligament, lifting the skin of the abdomen. By gliding the skin upon the needle, the point appears through the small puncture made by the first passage of the needle, when the other end of the wire is seized, and the needle is unarmed and withdrawn through the scrotum. The finger is now removed from the canal, and the two ends of the wire being drawn upon the loop, it dissects the cellular tissue up to the columns, which it hugs closely. By twisting the ends of the wire the columns are felt approaching, until they are brought into such close apposition as to allow nothing to pass between them ; the spermatic cord in its exit filling up all the available space remaining of the ring. When the ring is felt closed, the twisted wire is drawn firmly outwards, and clipped off as close as possible to the skin, so that when traction on the skin of the abdomen is removed, the gliding back of the integuments to their normal positions conceals completely the ends of the small loop of silver wire.” This is the description of the operation as given by Professor Chisholm. The operation which I performed was, but with one slight modification, precisely similar. Those who witnessed the operation were much struck, on passing their fore-fingers up the canal, to find how very distinctly the pillars could be felt approximating as the wire was being tightened ; and when it was tied, and the ends cut off, a perfect plug could be felt, presenting an impassable barrier to the egress of any portion of gut.

The progress of the case was everything that could be desired. For the first two days there was slight pain over the abdomen, which was subdued by small doses of opium ; and there was also a good deal of thickening of the cord, which subsided after a time. The small wounds healed slowly ; nor need this surprise us when we remember that the thermometer stood at 105° in the house.

On the thirteenth day after the operation he was able to rise from his bed and obey the calls of nature ; and on the twenty-fifth day he walked from the hospital to my house and back again, a distance of a mile and a quarter, without suffering much fatigue. On the 20th of June (twenty-four days after the operation) he was discharged, being at that time able to draw as much water from the well as he required for his own use.

ART. 124.—*On Hæmorrhage from the Rectum.*

By Mr. SYME, Professor of Clinical Surgery in the University of Edinburgh.

(*Canada Lancet*, October 15, 1863.)

“Internal hæmorrhoids,” says Mr. Syme, “are so generally the source of bleeding from the rectum, that hardly any others appear to have been noticed by writers on the subject. But having frequently met with the most profuse and obstinate hæmorrhage, when there was not the slightest trace of internal piles, I think it is very important that attention should be directed to the morbid states of a different kind which may give rise to this occurrence. Of these, the one most frequently concerned, is that of external hæmorrhoids.

“That pendulous flaps of skin hanging round the anus, should give rise to a serious flow of blood, seems in the highest degree improbable, and might indeed be deemed altogether incredible, were it not proved beyond the possibility of question, by well-ascertained facts. It is now more than thirty years since I became aware that external piles, independently of any other morbid condition, might be the cause of bleeding, through the observation of a case in which, although the patient had been rendered almost exsanguine, the most careful examination failed to detect any other derangement, and complete relief was afforded by its removal. Since then, both in public and private practice, I have had very many opportunities of observing similar facts, and of those may select the two following as sufficiently illustrative for the purpose:—

Mr. Craig of Ratho, to Mr. Syme.

“SIR,—The operation performed on Mr. D., in July, 1845, was most successful: he was then 47 years of age, and looked quite anaemic, having for many weeks lost a large quantity of blood at stool; the amount had daily increased, but the most careful examination of the anus and rectum revealed nothing more than a quantity of loose skin external to the orifice. When he sat upon the stool in our presence, pure blood to the amount of several ounces was speedily discharged, and formed a cake of coagulum in the utensil. You merely removed the whole of the loose skin by scissors, saying that you had reason to believe this would prove sufficient, and the result was a complete and permanent cure, as the patient never passed any more blood, and is still in good health.

Yours, &c.,

Ratho, 1861.

JAMES CRAIG.

“DEAR SIR,—The Rev. Mr. —— laboured under large and exhausting discharges of blood from the rectum, which had been going on for years. As there were some external hæmorrhoids, you considered that these were most likely the cause of the hæmorrhage. They were accordingly removed; since when there has been no bleeding whatever; and nearly six months have now elapsed since the operation.

Yours, &c.,

ROBERT PATERSON.

Leith, 31st May, 1861.

"How the presence of external piles causes bleeding from the bowel, or how their removal prevents it, I am quite unable to explain; but do not, on this account, regard these facts as of less importance in practice. If their occurrence were extremely rare, they would be of less consequence, but happening so frequently, as I have had occasion to see, their recognition is obviously a matter of no small practical importance.

"Another source of hæmorrhage from the rectum, which could not have been readily suspected or anticipated, is spasmotic stricture of the anus. The fissures and ulcers, which are so frequently connected with this condition, usually discharge a little blood, although hardly in such quantity as to constitute a prominent feature of the case; but, independently of any such complication, a mere contracted state of the sphincter may occasion the most profuse and serious bleeding. As an instance of this effect, I may mention a very remarkable case that was presented to me not long ago, by a medical student of great talent and diligence. He complained of bleeding at stool, but, on examination, was found so perfectly free from hæmorrhoidal disease, that I supposed he must labour under a delusion. Some time afterwards, remarking that he had become extremely pale and emaciated, I was led to make further inquiry, and then learned from a companion who resided in the same house with him, that there really was a copious discharge of blood which issued in a fluid state, and then coagulated. On making another examination, I found that the external part of the sphincter was tightly contracted, and knowing that this might be the cause of bleeding, made a division of the tight muscular fibres. No blood was subsequently discharged, and the patient soon regained his healthy aspect.

"There is still another source of hæmorrhage from the rectum of which I have met with only one example. The patient was a young lady whom I saw along with the late Dr. Graham, the professor of botany. She had lost so much blood as to excite attention by her altered appearance, and was brought from the country in quest of relief. I could not detect any hæmorrhoidal disease, or any other recognised derangement; but observed, that when expulsive efforts were made, the blood issued from a small round orifice, apparently seated in a varicose vein. To this point I applied a ligature with the effect of affording complete relief."

ART. 125.—*A New Method of Treating Inflammation of the Testicle.*

By Mr. BEANY, Surgeon to the Melbourne Hospital.

(*Australian Medical Record*, June, 1863.)

"My plan of treating all stages of acute inflammation of the testicle and its coverings," says Mr. Beany, "is by evacuating as early as possible the effused fluid contained in the tunica vaginalis by means of a small trocar and canula. I was formerly in the habit of using a small silk seton, which was allowed to remain in forty-

eight hours, and then withdrawn, but the trocar and canula seem to me to fulfil all the requirements of the surgeon.

" When called to a patient suffering from orchitis, and complaining of intolerable pain, I direct him to stand erect, and grasping the organ, as I would in a case of hydrocele, I plunge a trocar and canula into the tunica vaginalis at the most depending part of the scrotum, and completely evacuate it. I then direct him to keep his bed, and employ a lotion of acetate of lead and opium; this generally effects a cure in six or seven days.

" This plan of treatment I find has never been practised before; the only record we have of the employment of operative measures in the treatment of the *acute* form of orchitis is the barbarous and unnecessary one originally proposed by J. L. Petit—namely, that of cutting with a bistoury through the scrotum down to the testicle, and dividing freely the tunica albuginea. This practice was subsequently revived and practised by M. Vidal de Cassis, and more recently by American practitioners, but as yet it has found no favour at the hands of British surgeons.

" When serving with the British army in the Mediterranean, I had an opportunity of examining about twenty cases of acute orchitis, immediately after death, in the bodies of soldiers who had died from cholera whilst under special treatment, with the following results:—The tunica vaginalis was in a state of inflammation, and distended with turbid serum; the epididymis was enlarged at its lower part, and very much thickened and indurated; the testes were *slightly* enlarged, and their vessels considerably injected. We have hitherto been taught to regard the disease under consideration as an inflammatory affection of the parenchymatous texture of the testicle, the pain being attributed to the strangulation of the inflamed organ by the unyielding nature of the tunica albuginea, but, from what I have learned of the pathology of this affection, I am inclined to consider that it is the serous covering of the testicle—the tunica vaginalis propria—that is primarily affected, the vascular condition of the testes being merely a secondary lesion. My views on this subject are more fully confirmed by the fact that immediately an outlet is made for the escape of the effused fluid the pain in the testicle at once subsides, and it will be found but very slightly enlarged.

" I therefore look upon the disease hitherto termed 'orchitis' as an acute inflammation of the vaginal tunie, exhibiting the same phenomena as inflammation of serous textures in other situations; thus, the redness of the skin, the hardness and swelling, together with the sickening pain felt in the testicle, are only symptoms of the distended condition of the serous investment of the testicle.

" Although I am far from expecting that puncturing the tunica vaginalis will meet with the same opposition as cutting into the knee-joint, still it is to be presumed that my theory of the nature of acute orchitis, 'as suggested by the pathological condition,' will necessarily provoke discussion, and thereby elicit a diversity of opinion; be that as it may, the successful issue of the cases which have been submitted to the proposed method of treatment will tend in a great measure to settle most conclusively the *questio vexata*.

"The pathological sequence of acute inflammation of the tunica vaginalis testis are—first, effusion of serum, which is usually turbid, and may contain flakes of lymph and blood corpuscles; it may also become purulent. Secondly, inflammation of the epididymis, involving the spermatic cord; and, lastly, the testicle, and tunica albuginea, in a more or less degree. At first I was in the habit of strictly enjoining rest in the horizontal position for a period of seven days after the evaenation of the effused fluid, but I may here observe that I only employ this plan in the acute stage of the affection, and not in the sub-acute or relapsing form. In the treatment of the latter variety I am in the habit of strapping the testicle immediately after tapping, and allow the patient to follow his accustomed avocation."

CASE 1.—Mr. W., a clerk, aged 25, in December last, after rowing on the river on a very hot day, got chilled. This was soon followed by pain in the back and limbs. A warm bath and some colchicum and iodide of potassium was ordered, and in a few days he was well. As soon as he began to move about, pain with swelling set in, in the left testicle, which increased in intensity, and compelled him to keep his bed. When seen, the testicle was very much enlarged and very painful, and if it were allowed to hang down, vomiting was excited. I introduced a fine trocar and canula, and evacuated about five drachms of turbid serum, with immediate relief to the symptoms. Acetate of lead lotion was ordered to be kept constantly applied, and a dose of extract of acetate of colchicum, with blue pill and extract of henbane, to be taken. With the exception of a little pain in the side, and which lasted for about two hours after the operation, he was not troubled with any unpleasant symptoms. In seven days he returned to his office quite well.

CASE 2.—Mr. L., aged 22, whilst climbing over some bales of goods bruised one of his testicles; the pain caused thereby soon subsided, and he took no further notice of it until a few days after the occurrence, when he felt great pain in the testicle, with well-marked enlargement of the organ. He consulted me immediately, and I ordered him a suspensory bandage, a saline aperient, and a pill containing morphine and blue pill at bedtime. A few days after this I was asked to visit him, as he was unable to leave his bed; I found him suffering from all the symptoms of "Orchitis," and at once emptied the tunica vaginalis, drawing off about half an ounce of bloody serum. The after treatment, the same as in the last case, was attentively observed, and in seven days he was pronounced cured; he, however, started on a tour in the interior, riding on horseback a good deal over a rough part of the country, and before he reached Melbourne he found his former complaint returning. He applied again to me, when I found the swelling was larger than when I saw him previously. The testicle felt very heavy, but the pain was not so excruciating as it was during the *acute* attack. On this occasion I drew off nearly an ounce of serous fluid, and tightly strapped the testicle *immediately*, and permitted him to go to his business. There was very slight enlargement of the gland left, and this disappeared in about three days. It was again strapped at the end of this time, and instructions given to him not to call on me again until the adhesive plaster became loose. In a fortnight he came, and I removed the straps, and found him quite cured, but advised him to wear a suspensory bandage for a short time.

CASE 3.—F. G., ætat. 28, has suffered from stricture of the urethra for seven years, the cause of which he attributes to his having used a strong injection of nitrate of silver (12 grs. to the ounce). He came under my care in January last, and has been treated by progressive dilatation. About a

fortnight since I dilated his urethra, which gave him considerable pain, and two days subsequently he called at my house complaining of great pain and swelling of the right testicle ; he was directed to take a warm bath, some aperient medicine, and to keep the organ suspended, with directions to call again if the swelling and pain persisted. He sent for me the next day, and told me he was much worse, the pain was considerably aggravated, and the swelling had increased. I at once introduced the trocar and canula, and emptied the tunica vaginalis, which contained about $3\frac{1}{2}$ drachms of bloody serum ; lead and opium lotion was kept constantly applied, and in four days he was able to go to his office, saying he felt quite well.

CASE 4.—W. H., ætat. 22, a short time since contracted gonorrhœa, during the treatment of which he suffered from an acute attack of orchitis ; he was leeched, and hot fomentations were applied, and as soon as the inflammatory symptoms had subsided, his testicle was "strapped," but this gave him such an amount of intolerable pain that the plasters were removed ; he wore a suspender, and the testicle remained large, but free from pain. After a smart gallop across country he was seized with violent pain in the testicle, which continuing unabated for three days, he sent for me. I found him in a high state of fever, with great pain, and swelling of the left testicle. As he was of a highly nervous temperament, I administered chloroform, tapped the tunica vaginalis, and drew off about six drachms of turbid serum. I then strapped the organ very tightly, suspended the scrotum, and permitted him to go to his office. He called in five days, and pronounced himself well.

ART. 126.—*A Simplified Apparatus for the Radical Cure of Varicocele.*

By Dr. PACKARD.

(*American Medical Times* ; and *Dublin Medical Press*, May 20, 1863.)

"This plan," says Dr. Packard, "is merely a modification of that proposed by Rieord, or rather a simplification of the apparatus described by him. My experience with it in a number of cases has been so successful as to induce me to offer it for the consideration of other surgeons.

"The apparatus employed by me consists of a needle, a fine annealed iron wire, and a piece of sheet-lead. The needle is rather slender, two and a half inches in length, slightly curved near the point ; its eye is near the point, and it is either set in a handle or headed so as to be firmly grasped with a pair of forceps. The lead plate is about an inch and a quarter in length, by half an inch in width ; it has a hole bored through it near each end.

"Having isolated the swollen veins in the usual way, I pass the needle, armed with the wire, behind them, and slip it back along one end of the wire, leaving the loop. Cutting off the long end of the wire, I now arm the needle again, and pass it in the opposite direction, in front of the mass of veins, through the same openings in the skin ; it is then withdrawn as before, again leaving the loop. Each pair of ends is now passed through the other loop, when the mass of

veins will be enclosed between the two double wires. Now, taking the lead plate, I pass the ends through the holes in it, draw them rather tight, and gradually twist them all together over the middle of the plate.

"By twisting the collected ends of the wires once or twice every half-minute or so, there may be gradually effected a most forcible constriction of the diseased vessels; the twisting may be suspended when the pain caused becomes severe, or when the operator feels satisfied that the tissues must be cut by the wire if the pressure be further increased. Half-a-dozen additional turns, or more, may be daily made until the loops of wire have come together, which will be known by their looseness in the sinus formed by their passage. Now, by simply dividing them near one opening they may be drawn out by pulling on the longer end. So slight is the pain caused by this operation that I have not yet found it necessary to resort to anaesthesia for its performance. But the point I particularly wish to draw attention to is the cheapness, efficiency, and simplicity of the apparatus as compared with that of Ricord. The security given by the twisting of the ends of wire, and the power it affords of gradually tightening the loop in any case, seem to me to be among the great advantages of metallic over other sutures."

ART. 127.—*On the Means of Controlling Hæmorrhage in the Removal of Scrotal Tumours.*

By Dr. J. FAYRER, Senior Surgeon to the Medical College Hospital, Calcutta.

(*Medical Times and Gazette*, May 16, 1863.)

"Dr. Quinlan, of Dublin," writes Dr. Fayrer, "alluding to the removal of scrotal tumours, remarks, that recent operators have not acknowledged Dr. O'Ferrall's method of controlling hæmorrhage, though they have had recourse to it in these operations. He also remarks, 'that since the publication of Dr. O'Ferrall's plan of elevating the scrotum to drain it of blood, a complete change has occurred in these operations.'

"Dr. Quinlan is, perhaps, not aware that they are of almost weekly occurrence in Calcutta, that the tumour is invariably elevated to drain it of part of its blood before it is removed, and that such has been the case for many years—long before 1844 or 1845, when Dr. O'Ferrall's plan was made known.

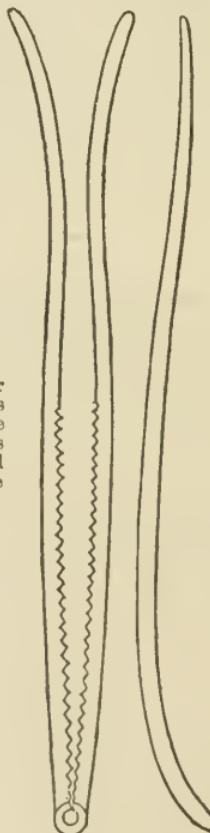
"The late Mr. Breit, of the Hon. E.I. Co.'s Service, in his work on 'Surgery in India,' printed in Calcutta in 1840, mentions elevation of the tumour to drain it as one of the preliminary steps of the operation. *Vide* page 94:—'The tumour should be turned over on the abdomen to allow of the veins being somewhat emptied of their contents.'

"We now use a clamp, of which I enclose a sketch of my own

design, or a running cord with a brass ring, a suggestion for which we are indebted to Dr. Mactier, B. M.S., and we have comparatively little dread of haemorrhage, which, I must add, in my experience of these operations, is more formidable in its arterial than venous form.

"I have no desire to detract from the originality of Dr. O'Ferrall's invention, but I and my colleague, Mr. Partridge, have frequently had recourse to this proceeding, unaware that it was claimed as an original invention, or was anything beyond what the circumstances of these cases naturally suggested."

STEEL CLAMP.

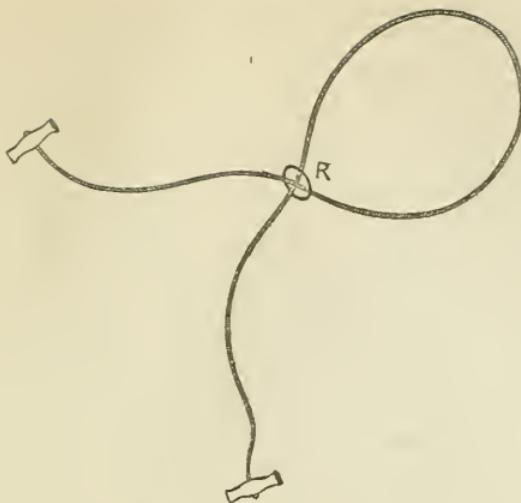


Front View.

The neck of the tumour is compressed with this clamp, which can be relaxed at a moment's notice, as it is only held and compressed by the assistant's hand.

Side View.

Curved to fit well into the perineum.



A cord, strong and twisted, like those of window sashes in England, running through a brass ring (R), and enclosing the neck of the tumour. It is fitted with a handle at each end, like that of a corkscrew, to pull tightly on. This is a most efficacious tourniquet.

ART. 128.—*Observations on Sterility in Man.*

By MR. CURLING, Surgeon to the London Hospital, &c.

(*Proceedings of the Royal Medico-Chirurgical Society*, June 23, 1863.)

The object of this communication is to show that a want of aptitude to impregnate may coexist with the capacity for sexual intercourse; or, in other words, that man is subject to *sterility* independently of *virility*.

The author states that sterility in man may arise from the following causes:—

1. Malposition of the testicles.
2. Obstructions in the excretory ducts of the testicles.
3. Impediments to the escape of the seminal fluid.

1. *Sterility from Malposition of the Testicles.*—The opinion of John Hunter, "that when one or both testicles remain through life in the belly they are exceedingly imperfect, and probably incapable of performing their natural functions," was corroborated in a remarkable manner by the facts adduced in this paper. After describing the condition of detained testicles, the author stated that the question to be considered was whether a testicle that had not passed into the scrotum can secrete a fertilizing fluid. He assumed as quite established, that to possess this property the semen must contain zoosperms.

Having referred to the observations of Professor Gobanx on horses, and to those of MM. Follin and Godard on man, the author remarks that the proofs adduced by these observers are not suf-

ficiently cogent and numerous to establish the law that cryptorchics are infertile; and it could not be expected that assent should be given to results so remarkable and unexpected without evidence of the most convincing character. Opposite opinions continued to be entertained, and had recently been avowed by Dr. Alfred Taylor.

The author gives the particulars of two cases of double detained testicle in married men (cryptorchies) without children; and also two cases of single detained testicle, the second testicle, in one case, being completely atrophied, and in the other having been removed by operation. In all four cases the copulative powers were satisfactory; but the ejaculated semen was destitute of spermatozoa. He gives a table, which included these four cases and five others; three described by Godard, one by Puech, and one by the President of the Society, making nine in all, in which the fluid ejaculated by men with retained testicles was submitted to examination, and found to be destitute of spermatozoa. In confirmation of the results obtained in these cases, he deduces some observations made upon the lower animals by MM. Gobaux, Follin, and Godard; and he furnished a table of eight cases in which the fluid found after death in the substance of a retained testicle—in the epididymis or vas deferens, or in the vesicula seminalis on the side corresponding to the misplaced gland—had been examined and found destitute of spermatozoa. They had not been discovered after death in the spermatic ways of a detained testicle in any one instance that he knew of.

The facts brought forward as opposed to the conclusion that cryptorchics are sterile, are chiefly instances in which they were reputed to have procreated children. Three cases are cited; one recorded by Mr. Poland, another by Mr. Cock, and a third by Mr. Durham. The author feels no little hesitation in calling in question the claims to paternity in these cases; but remarked that as yet no case had been found in which a retained testicle had been fully proved to be capable of secreting a fertilizing fluid. The observations collected in the paper seem sufficient to show that, as a rule, they do not; and though there appears to be no valid reason why there should not be exceptions, still the evidence was wanting to establish the exception in either of the instances of reputed paternity which had been mentioned.

2. Sterility from Obstructions in the Excretory ducts of the Testicles.—After giving a brief account of Gosselin's researches, in which he shows that after attacks of gonorrhœal epididymitis the channel for the semen is temporarily and sometimes even permanently obstructed, causing, when the epididymitis is double, sterility, the author relates three cases occurring in his own practice, of permanent obstruction in the epididymis of both testicles in married men whose wives were barren. In all three the patients had vigorous powers; but there was a total absence of spermatozoa in the ejaculated fluid. The author insists on the importance of careful and prolonged treatment in cases of epididymitis, to obtain the removal of inflammatory effusions.

The author remarks that the passage of the semen from the

testicle might be prevented by congenital absence of the vas deferens, which, if double, would occasion sterility. A case of the kind, in which the testicles were sound, had been observed by John Hunter.

The excretory duct of the testicles is liable also to be interrupted by tubercular deposits in the epididymis. It is well ascertained that this part is much more frequently the seat of tubercle than the body of the gland, and is often extensively diseased, whilst the substance of the testicle remains sound. The author gives a case in point, in which the semen was destitute of spermatozoa.

3. *Sterility from Impediments to the Escape of the Seminal Fluid.*—A close stricture in the urethra so completely interrupts the passage of the seminal fluid, that in the ejaculation it regurgitates into the bladder, where it mixes with the urine. In erection of the penis, the urethra becomes narrowed, so that a stricture which offers but a slight obstacle to the flow of urine may under congestion be sufficient to impede the emission of semen. The author has grounds for concluding that sterility from chronic stricture in the urethra exists to a greater extent than is commonly supposed. As the condition was one which is in most cases remediable, it was only necessary to call particular attention to it as not an uncommon source of infertility.

The author alludes also to a case in which he had reason to conclude that sterility was consequent upon inflammation and abscesses near the prostate gland, occasioning obliteration of the ejaculatory canals.

Two important and delicate questions arose out of these inquiries.
1. Whether a man who has the inclination and power to copulate, but who is nevertheless sterile, is justified in contracting marriage?
2. Whether his condition is a sufficient ground for a divorce?

That a man who is unable to fulfil the command, "to be fruitful and multiply" is right in disappointing the hopes and periling the happiness and perhaps health of a woman, could not, the author thought, be maintained by any casuist; and in some of the cases related in the paper he had felt it his duty to give advice in accordance with this opinion.

It could not be doubted that, in women ready for conception, frequent sexual excitement without impregnation was very likely to prove injurious to health; and the author showed from the writings of Dr. West that diseases of the ovaries and uterus originate from this cause.

The second question is one upon which a surgeon was scarcely called upon to pronounce an opinion. But the author remarked that, as sterility in women is not considered an adequate cause for divorce, so the man ought not to pay such a penalty for unsuspected unfruitfulness.

(c) CONCERNING THE UPPER EXTREMITIES.

ART. 129.—*An Easy Means of Reducing a Dislocated Humerus.*

By Dr. GARMS.

(*Archiv des Heilk.*, No. 2, 1863; and *Medico-Chirurgical Review*, July, 1863.)

Dr. Garms describes the following modification of Cooper's procedure. The patient is laid upon the floor, not on his back, but on his belly, some cushions intervening. A towel is attached to the humerus above the elbow, and another, passed round the upper part of the humerus, is given into the hands of the assistant, standing on the side of the dislocated arm. The operator, sitting down on the floor, on the same side, lays hold of the lower towel, and applies the heel of the foot lying nearest the patient to the axilla. He makes extension backwards and downwards, while the assistant draws laterally. The dislocation is thus reduced with surprising facility, the agency of chloroform not being required. The advantage of this modification is that extension backwards may be far more easily executed than when the patient is in the supine position; and this is the direction required in dislocation forwards, which prevails in the great majority of cases. For dislocation backwards, which is very rare, Cooper's procedure is the best.

(d) CONCERNING THE INFERIOR EXTREMITY.

ART. 130.—*A Case of Elephantiasis Arabum of the Lower Extremity Successfully Treated by Tying the Femoral Artery.*

By Dr. RICH. G. BUTCHER, Surgeon to Mercer's Hospital, Dublin.

(*Dublin Quarterly Journal of Medical Science*, May, 1863.)

This is the second case in which this operation has been performed, the first being one in which the operator was Professor Carnochan, of New York (*v. Abstract XVII.*, p. 178).

CASE.—The patient, a woman, æt. 44, was admitted into Mercer's Hospital, Nov. 6th, 1861. The disease, which was well marked, had been gaining ground steadily for eighteen years. The operation was performed on Nov. 25th, 1861.

In an hour after the operation the limb fell remarkably in temperature, and a good deal of pain was complained of about the knee and ham, when, in addition to the flannel bandage, the limb was wrapped up in cotton wadding, and heated jars placed along its sides, and also to the sole of the foot; a large opiate, with wine, was given, and repeated in two hours.

4 o'clock, P.M.—Heat perfectly restored throughout the limb, from one extremity of it to the other, and the pain considerably diminished. The patient had some sleep at intervals. Opiate and wine repeated.

9, P.M.—Heat of limb considerably increased, so removed the entire of the cotton wadding, leaving the toes only covered by it. The patient now free from all pain. The opiate to be repeated twice in the night.

Nov. 26th.—Slept occasionally through the night. Pulse 98; steady in its beat. Complains of some nervous pains about the knee and ham; no tenderness in the wound, which looks most satisfactory. She referred some spasmodic pains to the abdomen, such as she was frequently in the habit of experiencing before the operation. Now, as formerly, they yielded to very hot turpentine stupes.

On stripping the limb, it was observed by all the students how warm and natural was its temperature; and when tested by the thermometer it proved equal to the sound one, while the most striking characteristic of all was evidenced in the diminution of its bulk, the integuments in some places being absolutely flaccid. I again carefully rolled the foot and leg with a flannel bandage, to above the knee, gently and with a very equable support, then rested it throughout upon the pillows as before, slightly flexed at the knee, and somewhat rotated outwards. The opiates to be continued through the day.

4, P.M.—Going on most favourably, the nervous pains sometimes absent altogether. Expresses herself as deriving the greatest comfort from the increased pressure effected by the readjustment of the bandage. Temperature of the limb excellent.

9, P.M.—No pain, and inclined to sleep quietly.

Nov. 27th.—Slept for lengthened periods uninterruptedly; no pain of any amount. Bandage slackened; yet I did not wish to disturb the limb, even by lifting it, so soon again, for fear of interfering with or interrupting the reparative process in the wounded artery. Opiates freely; four ounces of wine, and beef tea.

9, P.M.—Has spent a quiet day; scarcely any nervous pain.

Nov. 28th.—Slept well; took some breakfast with appetite; limb free from pain. Readjusted the pillows. No tenderness or uneasiness about the wound; foot and leg preserving their natural temperature. To have beef tea, four ounces of wine, and full opiate at night.

Nov. 29th.—Slept well; pulse 98. No pain in either wound or limb. Removed the bandage; limb reduced as to bulk in a most remarkable way, and its natural temperature perfect. Another very important change has been brought about—the absence of the acute sufferings which the patient experienced in the ulcerated and eaten-away toes. I dressed them to-day without pain, though hitherto she experienced the greatest agony on their being touched. New skin is forming in many parts, whilst in others cicatrization and healing is established—the excess of vascular action being removed, which, according to my views, killed and perished them, as parts die from excess of inflammation. To continue full opiate at night, four ounces of wine, beef tea, and bread.

Nov. 30th.—Complained of great sensitiveness and pain in the wound this morning. On examination, parts were reddish, and evidently pus pent up; so I clipped, with a scissors, the adhesive straps, and cut two of the wire sutures and withdrew them. Matter appeared at the centre of the incision. No undue pressure of any kind was exerted upon it, and the tender, sensitive wound was covered with a soft linseed-meal poultice, half-an-hour after which all pain dispersed. Took her food at the regular hours, as usual.

3, P.M.—Free from pain; opiate repeated.

Dec. 1st.—Pain absent during the entire night, and she slept quietly. The wound looks well, matter oozing up from the vicinity and around the

ligature. All redness and puffiness gone. Temperature of the limb admirable. Poultice continued, and full opiates repeated every third hour, so as to quiet the whole system, and so act as a guard against haemorrhage.

Dec. 2.—No pain; wound suppurating; tenderness all gone; limb greatly diminished in bulk; wine, four ounces; beef tea; and full opiates every third hour; poultice still continued to the wound.

Dec. 3rd.—Wound suppurating kindly; to continue the opium.

Dec. 5th.—No pain whatever; wound flaccid; no redness; ligature lies quiet; limb gradually diminishing; and ulcers on the toes just healed.

Dec. 12th.—Wound all healed except where ligature comes out.

Dec. 15th.—Wound quite firmly united, except the immediate point where the ligature comes out. The cord has been most carefully protected, all through, lest any sudden drag or violence should be offered to it. The diminution of the bulk of the limb is still progressing in a very remarkable way.

Dec. 22nd.—A most striking change has taken place in the cuticular covering of the limb, all the scales have dropped off, leaving the skin smooth and even on the surface; the patient has now the power of moving the toes quite freely, and they, too, are greatly reduced in volume. Ligature still in its place, the slightest trace of purulent matter along its track; no attempt whatever made to hasten its detachment by that reprehensible practice of pulling gently upon it from time to time.

Dec. 26th.—I cannot express the satisfaction which I felt this day at finding the ligature safely cast off, and lying on the cicatrix, 31 days exactly after its application. Limb remarkably reduced since last adjustment of the bandage; applied one with greater firmness than before.

Dec. 28th.—Wound all healed now, the track of the ligature being sealed up.

Jan. 6th.—Diminution progressive of the limb; administered mercury so as slightly to bring the system under its influence, and had the limb freely anointed with iodide of lead and iodide of potash ointment; frictions with this application were had recourse to morning and evening, caution being observed that no breach of surface might be occasioned, yet at the same time, pressure of a moderate and steady kind was insured, and the dressings so saturated with the compound that the absorbents were stimulated and assisted in their action as far as could be accomplished. For four months this treatment was energetically and strenuously carried out, and so likewise gradually absorption was promoted. Soon the motions of the ankle-joint were moderately permitted; but as the great, massive, dense welts of morbid tissue above and below the angle of flexure were removed, so likewise the movements became more extensive, and, as time passed on, were at length gradually perfected. The motions of the great toe—which, together with the four others were locked, as it were quite removed from under control by the massive preponderance of new material—to a certain extent participated in the same marvellous change. I have qualified the amount of restoration; for two of them, the second and third toes, had grown together, were inattched into each other by early ulceration, granulated surfaces side by side, pressed closely to each other and cicatrized. However, the most important portion of this part of the foot, the great toe, became perfectly loosed—its actions perfect. At this time the patient regained full control over the motions of the foot, evidenced by complete flexion and extension, without the slightest pain. To so great an extent was the limb reduced, and so soft and pliable had the tegumentary covering become, that the tendons and muscles could be traced in their course, as they started out in action, when performing their movements; altogether the size of the limb

was but little larger than its fellow. At the end of the sixth month the patient was able to walk well upon the limb, without pain or uneasiness ; she expressed herself as feeling an indescribable relief from the burden which had so oppressed her for years. Though moving about and walking through the wards all day, no additional swelling followed, and never a return of pain. Shortly after this the patient left the hospital and resumed her occupation as a laundress ; frequently since I have heard the most satisfactory reports as to her condition, and the ability with which she is able to pursue her laborious business throughout the whole day, standing nearly the entire time, yet neither swelling, fatigue, or pain is occasioned by her doing so ; the precautionary application of a bandage is never dispensed with. So far as the history now goes, the case has, I would say, been eminently successful ; as to the permanent nature of the cure, time has not yet sufficiently passed by so as to afford a practical answer.

ART. 131.—*On Excision of the Knee-Joint.*

By Mr. R. G. H. BUTCHER, Surgeon to Mercer's Hospital,
Dublin.

(*Dublin Medical Press*, February 11, 1863.)

In a communication to the Surgical Society of Ireland, Mr. Butcher makes some interesting remarks on this operation, using as a text the case of a lad of 19, in which the operation had been perfectly successful. This case is the fourth in which Mr. Butcher had operated with a like result.

Mr. Butcher says :—“ It seems abundantly clear, from the facts collected by Dr. Hodges, as well as from the practice of Langenbeck, that gross carelessness and recklessness have been adopted in the selection of cases for the operation. What must we think of resection of the knee-joint performed for malignant disease of the patella ? or what think of resection undertaken for acute abscess of the joint when pyæmia had already commenced ? On resection performed on children, four years of age, who die of caries of the spine before the wound has had time to heal, notwithstanding, however great the authority or reputation of the surgeon that adopts such a line of practice, I deliberately state that he is open to grave censure ; he has mistaken altogether the nature and applicability of the operation, and has afforded examples of what ought to be avoided, and of a reckless style of operating, which tends greatly to retard the science, the art, and the progress of surgery.

“ I never looked upon the operation of excision of the knee-joint but as a severe and terrible measure, not to be undertaken lightly or without grave consideration as to its applicability.”

Mr. Butcher lays down the following directions to be adhered to in this operation :—

1. *The judicious selection of the case.*—The bones not being diseased far beyond their articular surfaces, while if upon section found to be a little more than had been expected, the part should be gouged out, or an additional thin slice removed ; but if to a greater extent, amputation should be at once resorted to, and, as recorded in my first memoir, with a hope of excellent success (*First Memoir on*

Excision of the Knee-Joint, page 64). Again, the report goes on to show that amputation may be performed some days after excision should any unfortunate circumstance in the management of the case have arisen to demand it. In this same paper seven instances are recorded of amputation of the thigh, and all made rapid recovery save one (page 65).

2. *The H incision should be preferred.*—The perpendicular strokes placed well back so as to allow all fluids and discharges to drain off—far more effective and safer than any opening made in the popliteal space. No portion of the flaps to be curtailed, though they may be thinned of any thickened fibrinous matter or diseased synovial membrane; the latter, particularly, should be clipped away with a strong scissors; all ligamentous fibres, both around and within the joint, should be cut through, and the extremities of the knees fairly freed and exposed.

3. *The patella should be taken away in all cases, whether diseased or not*, and then the section of the bones well thrust out in front should be made with “Butcher’s saw,” from behind forward, due attention being paid to the axis of the thigh bone at the time of its division.

4. *All bleeding vessels should be tied, or any that have sprung and retracted should be drawn out and secured*, so as to guard against intermediary haemorrhage.

5. *While the patient is yet on the operating-table, the limb should be placed in the horizontal position, either by gentle and steady traction, combined with pressure of the cut surfaces of the bones backwards, or, if necessary, the division of the hamstring tendons.* Their support behind, in every case. I look upon as of great value; therefore, their section must be looked upon as a last expedient towards straightening the limb.

6. *During the adjustment of the bones, great caution should be exercised that their surfaces be throughout their extent in contact, and that no soft parts intervene.* The flaps should be then laid down and connected by suture closely throughout their transverse division, while the lateral incisions should be brought together only at their extremities by one or two points, and the central portion of each, that corresponding to the division of the bones, should not be brought in contact, but dressed lightly with lint soaked in oil, thus securing a ready outlet for the escape of fluids. The extremity should next be cautiously laid upon “Butcher’s box splint,” padded to the natural configuration of the limb, its sides elevated, foot-board applied, suitable pads introduced, and then the anterior splint laid on, taking the place of the assistant’s hand, which from the first restrained the femur from projecting forward; then the straps buckled, the waist-band applied, and the patient may with safety be removed to his bed. The bed should be prepared in this way, and consist of a couple of hair mattresses, laid one upon the other, evenly supported, and intervening between the upper one and the sheet; a folded blanket, feather pillows for supporting the head and shoulders; the bed should be likewise moderately warmed so as to prevent the patient being chilled when put into it.

7. *The limb should not be disturbed for several days*, the length of time depending a good deal on the season of the year when the operation is performed, whether it be in the heat of summer or the cold of winter. After five or six days it may be necessary to let down the sides of the box splint, to sap up discharge, change lateral pads and soiled dressings, &c. By the apparatus named the facilities for cleansing the limb are so efficient that it may not be requisite to lift the member from its support for even so long a period as five weeks, as evidenced in my own practice. Should, however, it be considered expedient to change all the dressings, the anterior splint should be steadily held back by all assistants, and the limb pressed up to it, thus guarding against any starting of the femur forwards or displacement laterally when lifted from its bed. When the box is prepared, freshly arranged, the limb controlled after the manner mentioned, should be laid down, the side-splints elevated, foot board secured, and the straps over the anterior splint first tightened, so as to maintain it in that position, from which it was never suffered to change. I would impress the advice still further, if the straps be unloosed for any purpose, *the hand of an assistant should steadily keep the anterior splint in its position and well pressed back, until the artificial support is again brought to bear upon it and fastened.*

8. *In cases where large abscesses form in the vicinity of the excised joint, or up along the thigh, Chassaignac's drainage tubes may be used with the best hopes of success.* (See Butcher's Reports on Operative Surgery, Dublin Quarterly Journal, February, 1859.)

9. *The free administration of stimulants and sedatives imperatively demanded in all cases of excision, regulated to a certain extent by age, sex, temperament and habit.*

ART. 132.—*Luxation of the Head of the Fibula.*

By Dr. Jos. G. RICHARDSON, Resident Physician to the Pennsylvania Hospital.

(American Quarterly Journal of Medical Science, April, 1863.)

The following example of this accident is interesting from its rarity, there being but three cases of it on record, one by Sir A. Cooper, another by Malgaigne, and a third by Sanson :—

CASE.—John Dixon, a schoolboy, æt. 9, was admitted into the Pennsylvania Hospital on the evening of December 26, with an injury to the knee. In the absence of my colleagues, being called to the case, I found the child extended upon his back, with the left leg in a semi-flexed posture, and the foot slightly everted, apparently suffering considerable pain, and unable to completely flex or extend the limb. When questioned in regard to the accident, he referred the uneasiness to the outside of his knee, and stated that it was the result of a fall of about five feet from the top of a fence, and that he had struck that part of his leg against something in his descent. On examination, a protuberance was observed on the outer back part of the leg, about three-fourths of an inch behind the head of the fibula. The tendon of the biceps flexor, rendered prominent by spasmoidic contractions of that

muscle occurring at short intervals, was distinctly felt attached to this prominence. After a careful scrutiny of the joint and surrounding portions, in which no other lesion was discoverable, the diagnosis of luxation of the head of the fibula backwards was formed, and an attempt made to reduce it by insinuating the tips of the fingers beneath the fibula, so as to make some traction outwardly, at the same time the head of the bone was drawn forwards to the articulating surface on the tibia. In this way the displacement was overcome with but little difficulty, and the boy enabled to resume the natural movements of the limb. To guard against a recurrence of the luxation from muscular spasm or otherwise, a compress was placed behind the fibula, a firm bandage applied to the leg, and the patient directed to remain in bed with the limb partly flexed until further orders. No tendency to redislocation being observed, however, after a few days a cautious resumption of the usual functions of the limb was permitted.

ART. 133.—*On Chopart's Operation.*

By Mr. HANCOCK, Surgeon to the Charing Cross Hospital, &c.

(*Lancet*, Jan. 31, 1863.)

In a paper on the superiority of Chopart's operation and of excision of the ankle in all cases admitting of their performance, Mr. Hancock speaks as follows upon a former operation :—

"Chopart's operation, I need scarcely remark, is that whereby the anterior portion of the foot is removed at the joint extending between the calcis and cuboid and the astragalus and navicular bones, preserving the calcis and astragalus in their normal positions, and the ankle-joint intact. The objection, however, made against this operation is, that the extensor muscles of the ankle, having lost their opposing forces, and acting through the tendo-Achillis, draw up the heel, and direct the cicatrix towards the ground, whereby the patient, obliged to bear his weight upon the tender cicatrix, is prevented walking by the agony induced, and suffers so much that he willingly undergoes secondary amputation. Mr. Syme, who performed secondary amputation at the ankle-joint in three cases, remarks : ' You will observe that, as in all other cases of the same kind, ankylosis has taken place between the astragalus and calcis, whilst the latter has been previously drawn up by the action of the gastrocnemius, so as to prevent the patient from resting on the proper part of the stump.'

"In other cases, again, ulceration and exfoliation of the bone have occurred from tension of the flaps, necessitating the same untoward results.

"Instances are also recorded in which, after this contraction had taken place, the tendo-Achillis was divided, in the hope of remedying the mischief, but with so little success that Syme's operation was subsequently performed. Mr. Fergusson relates a case of this character.

"Nevertheless, I still advocate Chopart's operation wherever the disease is located anteriorly to the os calcis and astragalus, and where an adequate flap can be obtained. I have now performed this ope-

ration four times, with the best results, and I attribute this success to the following mode of proceeding :—

“ Making the upper flap at least an inch long, and carrying the under or plantar flap well on to the under surface of the toes, whereby, when there is much thickening, very nearly an additional inch is gained in that direction, and the junction of the flaps is brought to the centre of the stump instead of the upper margin, to which the principal stress is referred. The flaps, moreover, being full and free, danger of sloughing is avoided ; whilst, if required, they provide a sufficient covering for the whole or a portion of the navicular bone, which, when possible, should always be preserved, as by these means we not only obviate the necessity of opening into the large synovial cavity of the astragalo-navicular joint, but we at the same time preserve the attachment of the calcaneo-scaphoid ligament, and consequently the natural and firm support to the head of the astragalus, whilst we also make the stump more full and even. Again dividing the tendo-Achillis at the time of operation, and not waiting to do so until contraction has already taken place, when such division is useless, as the parts have now become adherent and fixed, and it is too late to remedy the mischief.

“ The success, moreover, is greatly influenced by the situation at which the tendon is divided. When this is done near to the os calcis, where the fascia extending from the tendo-Achillis on either side to the malleoli is dense and strong, and when the inability of the patient to rest his heel or foot on the ground during the antecedent disease has already induced a considerable amount of contraction, the consequent separation of the divided tendon is so slight that it quickly reunites, and the result is not to be relied upon. I always, therefore, select a point as near to the body of the muscle as practicable, where the fascia is less dense, and where the tendon is more under the influence of the muscular fibres.

“ Chopart’s operation, performed in accordance with these suggestions, will prove as successful as any in surgery.”

ART. 134.—*On the Treatment of the Early Stages of Hip-Joint Disease in Children.*

By DR. WM. PRICE.

(*British Medical Journal*, July 4, 1863.)

The object of this paper is not to advocate a new method of treatment, but to direct attention to the supposed superiority of one plan of treating the earlier stages of morbus coxae over all others: viz., the continued employment of the long splint.

“ Many provincial surgeons now discard the long splint altogether in the early stages of hip-joint disease, giving preference to splints made of gutta percha, leather, or pasteboard ; carefully moulded over the buttock, reaching somewhat above the ilium, and extending down the upper half or two-thirds of the femur. They argue that the patient is thereby enabled to take early out-door exercise on

crutches, and is saved a strict confinement to the wards of a hospital which the long splint necessarily entails. That much benefit is derived from the gutta percha and leather splints during a more advanced stage of the disease, no one will deny. But how, it may reasonably be questioned, can perfect immobility of a hip-joint be maintained by means of a splint which does not equally prevent movement of the knee and ankle-joints of the same limb?

"The long splint should reach from midway between the axilla and crest of the ilium to a few inches beyond the external ankle. It is best adapted while the patient is under chloroform; and, no matter how severe the previous pain or muscular contraction about the joint, speedy diminution of the more urgent symptoms, as a rule, ensues. The length of time required for its employment must necessarily vary in each particular case. I have now in the infirmary two children, side by side, one having worn a long splint for nineteen weeks, the other but five weeks; in neither case does any trace of original mischief now exist.

"In many old-standing cases of hip-disease coming under my notice, I observe marks of previous severe counter-irritation, produced by moxas, issues, and the like. I have long ago satisfied myself that these measures are not productive of any appreciable benefit, and in my own practice abstain from any external application save the actual cautery. This invaluable agent, applied repeatedly by dotting over the integument of the buttock and surrounding parts (not allowing, however, the heated iron to remain sufficiently long upon the surface to produce an eschar or slough), cannot be too highly extolled, more especially as a means for relieving the pain dependent upon commencing ulceration of the cartilages; the relief thus afforded being singularly marked.

"The happy results attending the above plan of treatment in my hands induce me to believe that an earlier discrimination of the first symptoms of hip-joint disease (as a rule, not difficult to recognise), the sedulous employment of a long splint, together with strict attention to a well-selected diet, would go far to diminish, if not the mortality, at least the deformities, resulting from advanced stages of a malady so common at all ages and amongst all classes of society."

ART. 135.—*Curious Reunion of an Amputated Toe.*

By Dr. RICHARD W. DAY.

(*Dublin Quarterly Journal of Medical Science*, August, 1863.)

CASE.—I was standing in the Royal Victoria Dockyard (passenger) one morning, and was nervously watching a "young hand" drabbing. He was handling the adze so awkwardly, that I cautioned him about it. I had hardly done so when he exclaimed, "I am cut." On going over to him, I found the upper leather of his right boot cut across the toes and instep. I had it immediately taken off, and the stocking carefully removed; as this was slipping off, he cried out that "his toe was in his stocking." I found the second toe literally amputated. The adze had cut obliquely, passing in the

direction through the phalangeal articulation. The thinnest bridle of skin from the sole of the foot prevented its complete separation. I wish it to be clearly understood that this connecting medium was so thin that it did not include a muscular *fibre*, it was in fact nothing more than a *thin* shaving of the thickened cuticle of the sole. There was much haemorrhage.

Being, as I said, a witness of the occurrence, and thinking that if there was any virtue in "Conservative Surgery" this was the time to test it, I brought the parts into apposition, and kept them so by two lateral sutures. A foot-splint and a roller steadied the toes and prevented muscular jerking; and a poultice, changed night and morning, was the only treatment in the progress of the case I found necessary.

During the first week the separated toe appeared as if its circulation was in abeyance; it was livid, cold, and had no sensibility. On the ninth day I was encouraged to persevere by my patient telling me that he felt a slight "tingling" in it. This sensation continued until the fifth week, when perfect union was established, and the toe had become nearly as strong as ever.

PART III.—MIDWIFERY.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 136.—*Spontaneous Uterine and Extra-uterine Gestation Proceeding to the Full Term.*

By Mr. C. R. COOKE.

(*Proceedings of the Obstetrical Society of London, June 3, 1863.*)

CASE.—E. R.—, aged 39 years, who had had three previous natural deliveries, was taken in labour on December 8, 1862. She had suffered no very unusual amount of inconvenience during her pregnancy beyond dragging pains, and an unusual sense of weight in the abdomen. On external examination, the abdominal swelling was found to differ from its normal characteristics, in having its greatest prominence considerably to the left side, and about on a level with the umbilicus; the whole tumour being also more circumscribed, well defined, and spherical in form than usual. The limbs of a foetus were distinctly traceable through the abdominal walls, and a placental souffle was audible over a large portion of the tumour. A vaginal examination showed the canal much elongated, its rugæ obliterated, and the os uteri drawn up beyond reach of the fingers. Suspecting, therefore, an abnormal gestation, Mr. Cooke requested Mr. Spencer Wells to see the patient with him, and he attended with Dr. Kuman, of Vienna. It was thought there were two sets of foetal heart-sounds, while the extensive surface over which the placental bruit was heard gave a suspicion of two placentæ. Whether the foetuses were both intra-uterine, or an ovarian tumour present also, was uncertain. At this time the pains were so slight and at such long intervals, that the patient was left, the bladder having been emptied, and a grain of opium administered, instructions being given to send for Mr. Cooke on the occurrence of expulsive pains or of any change in the patient.

She passed a good night, and the uterine pains had been gradually re-established during the next day. At six o'clock, P.M., Mr. Cooke was sent for, and found her in strong labour. Making an immediate examination, the sacral concavity was now found occupied by a firm, resisting, rounded tumour, presenting no trace of fluctuation, and immovable under a very considerable degree of force employed between the pains. Its presence reduced the outer posterior dimension of the inlet to less than two fingers'

breadth, through which no os uteri was discoverable; but resting on and anterior to the symphysis pubis, a small portion of the convex cranial surface of a foetus was to be felt.

Dr. Greenhalgh and Mr. Meates, of Chester-square, saw the patient. The diagnosis was still a matter of doubt, because the tumour was not traceable abdominally, the uterus being in front more or less; and examined per vaginam, it might equally have been taken for a solid tumour or a pedunculated fibrous outgrowth from the uterus. The obvious indication was to deliver the woman as speedily as possible, as the severity and frequency of the pain threatened rapid exhaustion of her strength, if not rupture of the uterus. Perforation of the head of the foetus was considered inadmissible from the almost impossibility of getting at it and fixing it, and because also, even supposing it accomplished, evisceration and dismemberment under the same difficulties would have been equally necessary.

It was decided, therefore, to put the patient under chloroform, so as to suspend the action of the abdominal muscles, in order to endeavour to displace the tumour and turn the child: and failing that, to perform Caesarean section. This being done, the tumour was pushed out of the vagina with some difficulty, and delivery completed by version. The placenta being removed, and the uterus not contracting satisfactorily, the woman moreover being much exhausted, it was thought advisable to avoid any manipulation of the abdomen with a view to discover the nature of the remaining tumour. She never entirely rallied from the shock and exhaustion from the operation, and died within forty-eight hours.

The autopsy was made four hours after death, Dr. Greenhalgh, Dr. Kuman, Mr. Spencer Wells, Mr. Meates, Mr. Colborne, and Mr. R. L. Cooke being present. On opening the abdomen and reflecting the walls, the first thing revealed was the body of a full-grown female foetus contained in its proper membranes, which were unruptured, and distended with liquor amnii. The anterior or external surface of the chorion was perfectly smooth, and in immediate relation with the abdominal peritoneum. Beneath the tumour the uterus was seen, partially contracted and unruptured. There was a large quantity of greenish-brown, grumous fluid in the peritoneal cavity. On opening the foetal membranes and removing the foetus, it was found that the placenta was situated in, and firmly attached to, a shallow capsule, formed of the expanded and enlarged fimbriae of the right Fallopian tube, which on its convex or peritoneal aspect was firmly tied down by numerous and very tough bands of old adhesion. A stylet could be passed along the tube to its expanded extremity, when it became arrested by the placenta.

ART. 137.—*Slowness of the Pulse in the Puerperal State.*

By M. BLOT.

(*Gaz. Hebdom. de Méd. et Chir.*, Juillet 31, 1863.)

M. Blot gives the following summary of his observations on this subject in a memoir read before the Academy of Medicine in Paris:—
1. In healthy parturient women there is generally observed a more or less marked retardation of the pulse. 2. The frequency of this phenomenon varies necessarily with the state of the health. In the physiological state the retardation of the pulse appears to bear a general relation to the uterine depletion; its degree alone varies. It does not depend on the disposition, peculiar to some females, to

have ordinarily a slow pulse. In the cases which have come under M. Blot's observation, it has been ascertained, by subsequent examination, that in the non-puerperal state the pulse was of the ordinary frequency. 3. The degree of retardation varies much. In three of M. Blot's cases the pulse fell to 35 in the minute; it most commonly varies from 44 to 60. Food has no manifest influence, as was proved in twenty-one cases observed at the Hôtel Dieu. 4. Retardation of the pulse is more frequent in multiparæ than in primiparæ; this, M. Blot thinks, may be explained by the greater frequency of puerperal accidents in the latter. 5. The duration of the retardation varies from some hours to ten or twelve days. It is generally most prolonged in cases where the amount of retardation is greatest, unless some diseased complication of the puerperal state supervene. 6. The progress of the retardation is almost always the same; it ordinarily commences within the first twenty-four hours after delivery, increases, remains stationary for a time, and then gradually disappears. It often persists, even in a very marked degree, during the period which is described (often improperly) as milk-fever. 7. The duration of labour does not appear to have any notable influence on its development or on its degree. On the other hand, the least pathological disturbance prevents its production or causes its disappearance. It occurs after abortion, and after spontaneous or artificial premature delivery, as well as after delivery at the full term. Uterine discharges, however copious, do not cause its disappearance; with haemorrhage the case is generally otherwise, but sometimes the retardation still persists after haemorrhage that has not been too copious. 8. The retardation of the pulse is notably affected by the position of the patient. 9. Retardation of the pulse is a very favourable prognostic sign. It is only met with in women in good health. In hospital practice its frequent occurrence indicates an excellent sanitary condition; while its rarity should cause the physician to dread the approach of some of those morbid conditions which so often prevail in the epidemic form. 10. The cause of the retardation of the pulse is not to be sought in a kind of nervous exhaustion. Researches with the sphygmograph, which M. Blot has made in conjunction with M. Marey, show plainly that it is connected with an increase of the arterial tension after delivery.

ART. 138.—*A Case of Induction of Premature Labour by Dr. Barnes's Method.*

By Mr. F. M. CORNER, Surgeon to the Poplar Hospital.

(*Lancet*, June 31, 1863.)

The following case illustrates in a very satisfactory manner the perfection of the method of inducing premature labour introduced by Dr. Barnes, and it is an instance of a most useful application of the method in a case which could hardly have been relieved so successfully and so speedily by any other means:—

CASE.—My patient, aged about thirty, menstruated naturally at the end of July, when she considered she became pregnant of her third child. From this date to Sept. 10th she had a slight discharge of blood, lasting a day or so and disappearing for several days; and then (Sept. 10th) a large quantity of aqueous discharge, with reduction of the size of the abdomen, but no change in the fulness of the breasts or other symptoms of pregnancy. On the 23rd of October a larger loss of blood took place, attended by shrinking of the mammae, coldness in the abdomen and thighs, and a drain from the uterus of black thick fluid. Her general health underwent change, she feeling sickly, faint, and thoroughly “out of sorts.”

I first saw her in the early part of November, and found a tumour, shaped like the pregnant uterus, reaching to the umbilicus, soft and doughy to the touch, and giving the impression of nothing beyond fluid within. Internally the os was found patent, the sound being readily passed several inches. After watching her for several days, I determined on exploring the interior of the uterus, believing in the presence of a deceased fœtus.

On the 8th of November, having opened the os somewhat by a sponge tent, I, at a quarter past eight P.M., introduced Dr. Barnes's second-sized bag, and inflated it, to secure moderate pressure within the canal, and left for an hour. It was then found that regular uterine pains had been established, and the os had dilated and seemed very dilatable. The largest-sized dilator was then passed, and at intervals of a few minutes was progressively filled, effecting, like the one first used, dilatation and uterine action. At eleven P.M. the os was sufficiently dilated to allow of a full examination, when I found a tough, membranous bag presenting, pressed down by each pain. This failing to make much progress, I gave a dose of ergot and punctured, liquor amnii escaping, and almost directly following, a fœtus of, I should fancy, three months' gestation. The head was encircled by the os for some minutes, so that before expulsion I could not determine whether it was living or not; it was not at all decomposed. I left at midnight, congratulating myself on the issue of the case.

I may briefly mention what struck me particularly in the use of these instruments: the ease with which they were introduced within the os by the aid of a pair of long, straight, narrow-bladed forceps, commonly used, I believe, for cleansing or making applications to the uterus; the absence of complaint on the part of the patient; and their speedy action in dilating the parts and inducing natural expulsive pains. For the purpose intended by Dr. Barnes I have no doubt they will prove everything he has stated. Certain, safe, and speedy, what more can be desired? I never had any case the result of which pleased me more. Everything went on as one wished, neither more nor less.

ART. 139.—*Tartrate of Antimony as an Oxytoxic.*

By Dr. PARKER.

(*Edinburgh Medical Journal*, January, 1863.)

The following notes were communicated to the Obstetrical Society of Edinburgh. Dr. Parker says:—

“Tartarized antimony has long been, as you are aware, in use in obstetric practice. Lecturers and authors have informed us, and still continue to do so, that the result of its administration is to advance the labour—1st, By overcoming muscular rigidity; 2nd, By causing a free flow of mucus, and thus lubricating the vaginal mucous

membrane. While not confining its use to primiparæ, they speak of it as more especially serviceable in this class of cases.

"With this much theoretic knowledge of its action, I, sixteen years since, commenced testing it practically, and it was not long before I observed that, in addition to the actions previously attributed to it, a very important end was effected in a large majority of cases by its administration. I refer to its influence on the uterine contractions; in other words, to this agent as a powerful stimulant to the involuntary muscular action of that organ. While relaxing the circular or sphincter fibres of the os uteri, I observed that it produced more powerful propulsive efforts, by stimulating the longitudinal and other muscular fibres concerned in effecting delivery.

"As early as the years 1846 or 1847 I called the attention of some of my medical friends to the facts, and requested them to keep a record of cases in which this auxiliary agent was prescribed.

"It is unnecessary that I should occupy time by detailing minutely reports from my case-book. A brief summary of what I have observed in reference to this matter in a very large number of instances, and the deductions drawn therefrom, will suffice, and equally subserve the end I have in view.

"1st. Tartarized antimony relaxes both voluntary and involuntary muscular fibre concerned in resisting and retarding labour; in other words, it overcomes the rigidity of the os uteri and perineal muscles.

"2nd. By increasing the vaginal mucous flow, and lubricating that surface, it essentially aids the progress of parturition.

"3rd. *It stimulates to increased contractile action the oblique, longitudinal and other muscular fibres concerned in expelling the child.* It may be said that this increased contractile action is only apparent, and that the advance of the labour is due to the decreased rigidity and resistance of the os and more external parts, in consequence of the tartarized antimony having produced the results stated in the two preceding propositions. This objection is at once removed and proved to be incorrect by the results following its administration, in cases not primiparous, where there is 'inertia uteri' with the os fully dilated, the vagina patent, and the perineum not rigid. In just such labours I have been in the habit of prescribing the tartarized antimony instead of ergot with the most marked results.

"4th. Unlike ergot of rye, it does not produce continuous contractions, but, in the majority of cases, enhances the power and force of the regular pains, and admits an interval of ease.

"5th. It continues to some extent to exert its contractile influence after the expulsion of the child, and hence reduces the risk of haemorrhage. Of course this result will be modified by the interval that has elapsed between the administration of the antimony and the delivery.

"6th. Unlike ergot, it does not interfere with the extraction of the placenta, by producing irregular uterine contractions. The superior and propelling portion of the organ, it is true, is generally more firmly contracted than natural after delivery; but the sphincter (the os) is mobile and yielding, and but little difficulty (no morbid

condition of the parts being present) is experienced in this particular; abdominal pressure, and traction in the proper axis, will almost invariably effect the end without injury to the cord.

"7th. While perhaps more applicable to primiparæ, tartarized antimony may be administered with like results in subsequent labours, and that at any age or stage of labour, without risk of injury to the uterine texture.

"8th. Administered as I shall presently state, its emetic effects are not troublesome; not more so when they do occur than from ergot, when this latter, as it very frequently does, produces vomiting. This effect of the antimony, when present, will promptly yield to cold oatmeal, coffee, a mustard cataplasm over the stomach, or a dose or two of the trisnitrate of bismuth.

"9th. I have never known depression of the vital powers, or more than temporary inconvenience, to follow its use when administered in the mode hereinafter mentioned; although I can readily conceive that there are cases in which it would not be inadmissible. In the selection of appropriate cases, and discriminating in this matter, medical men must have recourse to and be guided by their experience and general principles.

"10th. Tartarized antimony, by facilitating and shortening the process of parturition, as above mentioned, without risk to the uterine apparatus or general system, will, we may confidently expect, by conserving the vital powers and reducing the nervous shock, show, on more extensive trial, favourable statistical results in the mortality attending obstetric practice.

"The foregoing observations and conclusions have not been arrived at hurriedly, and they are not deductions drawn from a limited number of cases, or, as you are aware, from a limited field of observation. While they will be found correct in a large majority of cases, I am free to admit that tartar emetic will not in all cases produce the same results. And, indeed, of what therapeutic agent can we write in other language? Once only (six or seven years since) I have met with a single recorded remark that would lead me to infer that the *contractile influence* to which I have referred has been noticed by others. I cannot now lay my hand on the periodical which contains it, but I recollect the writer states that, after injecting two grains (I think) of tartarized antimony into the rectum in a case of tedious labour, for the purpose of overcoming muscular rigidity, *the pains very shortly became stronger and more effectual, or words to that effect.*

"The rationale of its action is undoubtedly to be referred to the influence tartarized antimony exerts on the sympathetic system of nerves. The uterus, like the stomach and intestinal canal, is composed of involuntary or unstriated muscular fibre, and is, like the other abdominal organs, largely dependent for nervous supply on the sympathetic system. Now, we all know as the action of antimony on these hollow abdominal muscles or canals, that, when administered in sufficient quantity, forcible contractions of the circular and longitudinal fibres composing them, and relaxation of the sphincters, take place; just what I have remarked and recorded as occurring in the

uterus. Similarity of texture and nervous supply would then analogically point to that which experience and observation have taught me is in reality the case in reference to the action of this agent in the uterus in the act of parturition.

"Ergot of rye, while acting primarily and with more energy on uterine muscular fibre, exerts at the same time a secondary or inferior influence on the stomach, often producing, as I have before remarked, troublesome vomiting.

"Now, the deduction one would naturally draw from the above observations is, that all, or most of what are termed "specific emetics" would, through the agency of the sympathetic system, exert their contractile influence on the uterus, and *vice versa*, as just illustrated in the case of ergot—*i. e.*, therapeutic agents which cause uterine contractions will have a similar action on the stomach and intestinal canal. I have not administered ipecacuanha with the same object in view, but have very little doubt that if tried it will be found to produce like results. Its taste and bulk would, however, other things being equal, give a preference to its more convenient ally, tartar emetic; while, on the other hand, its depressing effects would not be so marked in cases where a continuance of the medicine should be considered advisable. In this connexion I may remark that it is suggestive, and at the same time corroborative of the views here stated, that nausea and actual vomiting, occurring naturally during labour, very generally advance, and often materially shorten the process, by increasing the contractile power of the uterus. I administer the tartarized antimony as follows:—From one to two grains are dissolved in a wineglassful of water, and a dessert-spoonful given every ten or fifteen minutes *ad nauseam*; and if the pains are not increased sufficiently, and there are no contra-indicating circumstances present, it is continued beyond this point. The rectal mode, to which reference has been made, has its advantages, and, at the same time, its inconveniences; but there are cases in which it should have the preference.

"It only remains for me, in conclusion, to ask the members of this Society to give the subject their consideration, to note at the time the results attending its administration, and not to report their conclusions until they have given the matter a fair and somewhat extended trial."

ART. 140.—*On Supporting the Perinæum.*

By Mr. JOHN RUSSELL, of Bawtry.

(*British Medical Journal*, August 20, 1863.)

In a letter upon this and other matters, Mr. Russell says:—"Judging from my own attempts to retard the advancement of the head, I believe it to be impracticable (at any rate for any benefit). For supposing that by applying direct force to the prominent part of the child's head you retard its progress, such pressure opposed by the *vis a tergo* must necessarily tend to shorten the long, and increase the short, diameter of the cranium, and thereby cause greater dis-

tension of the perinæum. I never have myself had a ruptured perinæum in practice during the passage of the head in a natural presentation, although I have attended patients in whom ruptures had occurred in former labours. My plan has always been to carefully watch the advancement of the head, and as it passes the edge of the perinæum, to compress it with the point of the fingers (generally supported by the other hand), placed immediately anterior to the perineal margin, forcibly upward against the pubes ; carrying the fingers back as the head advances ; taking care not to entangle the perinæum between the fingers and head, and guarding especially against any injury by the finger-nails ; and relaxing the pressure during the intervals of relaxation of pains. By these means the elastic cranial bones will be found to yield under the fingers, relieving the centre from all pressure, and leaving a space between it and the head ; and the secondary effect is to transfer the strain to the sides, and on those points of the perineal edge where, in cases of threatened rupture, the bilateral section has been recommended.

" We observe that where nature anticipates unusual distension of any part, she directs an additional quantity of blood to it ; and in no case is this fact more apparent than in the vulva, in anticipation of parturition. From this we may infer that blood is necessary for the distension of integument, &c. And the effect of pressing against the child's head through the perinæum, as has been recommended, must be to express the blood, and thereby lessen the elasticity of the parts."

ART. 141.—*A New Mode of Proceeding in Placenta Prævia.*

By Dr. W. H. MOORE, of Buntingford, Herts.

(*Medical Times and Gazette*, May 23, 1863.)

In a short article on this subject Dr. Moore says :—" During the past ten years I have had in my practice six cases of placenta prævia, and, although all the mothers are living, the results with respect to the children have been exceedingly unsatisfactory. My usual practice has been to turn, but in my last case I adopted a different proceeding, an account of which I now give."

CASE.—Mrs. K., aged 36, was taken in her fifth labour at 8 A.M., the first pains causing haemorrhage. On examination, the os was sufficiently dilated to permit of the presentation being accurately made out, and nothing could be felt but placenta. During the day pains kept off ; but towards 5 P.M. they recommenced, were short and slight, and each one brought blood. About 6 P.M. the os being sufficiently dilated to allow of the introduction of the fingers, I carefully separated the placenta from around the sides and front of the os, leaving its attachment behind untouched. I then passed my fingers beyond the part I had detached, and found the head bearing down. Seizing a portion of the membranes covering it between my fore and middle fingers, I withdrew my hand, loosing my hold of the membranes when they were in vagina, by which means I plugged the os with the detached portion of the placenta and the unruptured membranes. Haemorrhage ceased at once. After waiting fifteen minutes for pain, I gave a dose ergot with

brandy, and repeated it in half an hour, shortly after which good pains came on, and labour progressed and terminated in the natural manner, without further loss or danger, and the mother made a good recovery.

The child, to all appearance a seven months' one, was still-born, but re-lived under the Marshall Hall method of artificial respiration ; and although badly nourished and weak, has got on well, and is likely to live.

From these facts I think I may reasonably conclude that had I delivered by turning, the child would have been irrecoverably still-born.

On examining the placenta, I found I had separated about one-third of it from its attachment to the uterus.

ART. 142.—*On Broncho-Pneumonia in Lying-in Women.*

By Dr. ROBERT BARNES, Obstetrical Physician to the London Hospital.

(*Transactions of the Obstetrical Society of London*, vol. iv., 1862.)

In a communication on this subject Dr. Barnes writes :—“ I have long been familiar with the fact that lying-in women are liable to a peculiar form of broncho-pneumonia. It is generally considered that the pulmonary symptoms which arise during child-bed are the consequence of the violent straining attending the expulsive stage of labour, and of “ taking cold ” during the exposure sometimes incident to that event. To me this explanation is far from sufficient. As in typhoid fever, so in puerperal fever, the lungs are apt to be involved. In either case the cause is similar. I may here observe that a marked characteristic of typhoid fever is extreme alkalinity of the blood. The urine I have frequently found highly ammoniacal on voiding. A similar condition commonly marks the blood in puerperal fever. On one occasion I observed that the bladder, being partially paralysed, and the urine consequently retained in the intervals of being drawn by the catheter three times a-day, the urine decomposed so rapidly in the bladder as to evolve large quantities of ammoniacal gas, which escaped in a stream with a gurgling sound when the catheter was introduced. These symptoms, with others which need not be enumerated, indicate a dyscrasia of the blood, which must produce certain irritating effects throughout the body. The diarrhoea of puerperal fever, and the diarrhoea which frequently appears in child-bed, apart from overt fever, is the simple effect of the irritation of the intestinal mucous membrane by the septic or other offending matter circulating with the blood. Peritonitis, cellulitis of the limbs, synovitis—all arise in the same way.

“ Accompanying this diarrhoea, or apart from it, we may have broncho-pneumonia. This, in like manner, is simply the effect of the irritation of the bronchial mucous membrane or parenchyma of the lungs by the same offending matter. In some of these cases the breath of the patient has possessed an odour distinctly resembling that of the lochial discharges. Broncho-pneumonia may, in short, be regarded as a symptom, or a part of puerperal fever. But in many cases the fever is masked, or so slight that it escapes observation, and the attention is fixed upon the pulmonary symptoms alone.

"In these cases there is generally a considerable degree of prostration. The whole or the greater part of the mucous tract of the lungs is involved. The expectoration amounts to bronchorrhœa. Large and fine crepitation are heard in almost every part of the chest. The sputa are sometimes tinged with blood. Depletion is not borne. The most successful treatment consists in the administration of cinchona, senega, or serpentaria, in the form of decoction or infusion, with ammonia, and at a later stage with nitrohydrochloric acid, blisters to the chest, good nourishment, in the form of strong beef-tea, eggs and milk, and a moderate allowance of wine or brandy.

"The form of broncho-pneumonia I have thus sketched is not to be confounded with that which is the result of capillary embolia of the pulmonary arteries, although there is this affinity between them, that both are set up by offending matter brought to the lung tissues by the circulating blood.

"The importance of recognising this form of broncho-pneumonia will be admitted when its bearings upon childbed mortality are considered. In some statistical statements I have noticed that certain kinds of death are excluded, on the presumption that labour had nothing to do with the fatal result. Bronchitis and pneumonia are thus treated, although to the informed critic the deaths from these causes may be as plainly traceable to the puerperal process as are the deaths from peritonitis.

"It is by the complication of this form of pneumonic irritation that I account for the fatal acceleration of phthisis after labour."

ART. 143.—*A New Method of Embryotomy and of Decapitation.*

By M. PAJOT.

(*Archiv. Gen. de Méd.*, Août, 1863.)

M. Pajot describes a new method of embryotomy and of decapitation as follows:—One branch of the forceps is used. The crotchet which terminates it (M. Pajot speaks, of course, of the French instrument, of which the handle, made of iron, is so constructed) is perforated, and lets a fine cord, known by the common name of whip (*souet*) pass through. At the summit of the loop formed and held in the canal of the crotchet is a ball of lead. This crotchet being introduced, the leaden ball tends to fall back towards the uterine neck, drawing the cord with it. A speculum introduced into the vagina to protect it, the surgeon draws upon the two ends of the cord by a sawing motion. Less than a minute is enough to complete the section of the neck or trunk. In cases in which the child is bulky, where the scapulae are caught by the cord, the operation may last five minutes.

ART. 144.—*Dislocation of the Ensiform Cartilage occurring during Pregnancy.*

By Dr. ROBERT SIM.

(*Edinburgh Medical Journal*, February, 1853.)

CASE.—The lady in whose case the eversion took place is rather under middle height, of a symmetrical form, and in the prime of life.

About the end of the sixth month of her recent pregnancy, which was her fifth, she began to complain of great pain in the right side; but, as Dr. Mackay observes, it would be difficult to ascribe this pain to the eversion of the ensiform cartilage. There was pain at the place where it was turned over, but there was also great pain lower down, in the right hypochondriac region, the cause of which I must leave to you to explain, as I know of no satisfactory reason given for the existence of these very violent pains, sometimes so distressing, during the last months of pregnancy.

The patient was delivered of twins in the month of October last, and my attention was drawn by her to a “lump” under the right mamma, a few days after the confinement. I must tell you that this lady lives in constant dread of cancer of the breast, and that, when she drew my attention to the swelling, she evidently supposed it to be a scirrhouous tumour. For two or three days I was afraid that her fears were too justly entertained; but, after observing the tumour for a few days longer, I was gratified to find that it was gradually diminishing in its circumference, and that the hard central part was also changing its form and position. In short, I soon discovered that the hard central part of the swelling, which remained after the disappearance of the surrounding tumefaction, was simply the ensiform cartilage, which had been gradually everted, pressed upwards, and turned over to the right side by the encroachment of the gravid uterus. On the uterine pressure being removed, the cartilage gradually rose from its abnormal position. At first I could hardly insert my forefinger between it and the cartilages of the ribs on which it lay. After some time it was at right angles to the sternum, and thenceforth its progress to its own place was more rapid. At the end of the sixth week from parturition, the cartilage had resumed its proper position.

There was nothing unusual in the labour. Its duration was only about three hours. The presentations were—first feet, next head. The liquor amnii was not unusually abundant, nor was there anything remarkable about the size of the placenta. The twins, together, weighed twelve and a half pounds avoirdupois. The former births were all single.

The length of the sternum is seven inches, that of the ensiform cartilage rather more than two. The distance from the sternum to the pubis I have not ascertained, nor other abdominal measurements.

ART. 145.—*Case of Utero-Placental Adhesions which gave Rise to Severe Symptoms.*

By Dr. DELORD.

(*Journ. de Méd. et Chir. Prat.*, March, 1863; and *Edinburgh Medical Journal*, June, 1863.)

CASE.—In the month of May last, I was sent for by the wife of a notary, who was entering upon the ninth month of her first pregnancy. Although I could recognise no sign indicative of the commencement of labour, Mrs. A.

experienced dull constant pains in the loins and abdomen. Movement somewhat increased these pains, but not to such a degree as to render them insupportable. I prolonged my examination; and pressure, carefully and methodically exerted over the whole surface of the uterus, having failed to discover any sensitive point, I concluded that the seat of the pain was situated more deeply. Pressed by my questions the patient stated, that independent of the lumbar and abdominal pains, she experienced a peculiar dull pain, which was constant, and was located in the right portion of the fundus of the uterus. This avowal removed all the doubts I might have entertained, and I considered myself justified in diagnosing an inflammation of the placenta, to combat which I prescribed repose, a light diet, and injections. Under the influence of this treatment Mrs. A. felt better, but she still experienced an unusual sensation, a sort of weight and dragging in the region of the uterus. The result proved that, in referring this sensation to the existence of utero-placental adhesions, I was not deceived. On the 18th of the following June, Mrs. A. was delivered at the full time of a healthy infant. Under any other circumstances I should have waited—according to the obstetrical rule I have laid down for myself—the natural expulsion of the placenta; but as in this case I had serious grounds for apprehension, I applied slight frictions over the uterine region, hoping in this way to give rise to some effectual contractions, and so to hasten the delivery. At the end of half an hour of vain expectation, I administered a full dose of the decoction of ergot. The effect of this soon seemed to manifest itself; but at the same time the patient turned pale, and I discovered that internal haemorrhage had taken place. The cord, rendered friable by inflammation, gave way under the traction which I considered it right to employ without delay. I introduced my hand into the uterus, from which a gush of blood took place; fainting fits succeeded one another, and the poor mother seemed on the point of death. In this critical situation I compressed with my left hand the abdominal aorta; then, by means of my right hand introduced deeply into the uterus, I separated all that part of the placenta which could be detached, pinching at the same time the inner surface of the uterus, with a view to provoking salutary contractions. This manœuvre was crowned with success, and the patient was thus saved from the immediate danger of haemorrhage. But if the condition of matters was now less alarming, the fact of the retention of a considerable portion of the placenta could not but inspire me with inquietude. A consultation was held, and the unanimous opinion was, that the sole indication for the present consisted in sustaining the strength of the patient, and in extracting the remains of the placenta by every possible means. The next day the pulse became rapid, and the abdomen became somewhat painful over the uterine region. During the following days a sanguous and fetid discharge took place from the genital organs. There were occasional rigors, extreme prostration, and other signs of purulent absorption. The treatment consisted in the administration of beef-tea, sulphate of quina, and cinchona wine, and in the employment of detergents and disinfectant injections. As to extracting the remains of the placenta, the idea required to be abandoned, as the patient peremptorily refused to allow any such attempt to be made. Nevertheless, after a few days, a portion of the placenta was expelled naturally, when, for a second time, alarming symptoms threatened to compromise the life of Mrs. A., which, however, yielded to the treatment previously employed. On the 14th of June a second fragment of the placenta was expelled. From that time the amelioration was progressive and uninterrupted. Convalescence was established in the course of the fourth week, and on the 30th of August I could convince myself that the health of Mrs. A. was perfect.

In this case, as in another which occurred to me in 1840, absorption of the placental substance retained in the uterus by adhesions consecutive to plastic inflammation of the placenta, took place without accident. The symptoms of putrid absorption observed in the present case depended exclusively on the presence of fragments detached from the mass of the placenta, as was proved by the circumstance that, after the expulsion of the fragments, all the dangerous symptoms disappeared. From these facts we may conclude that resorption of the placenta is only possible when it has been united to the surface of the uterus by means of an organized plastic growth, and when a common life has been established between the two organs by means of vessels of new formation. Under these circumstances, resorption may take place without any bad symptoms. If, on the contrary, the placenta has separated in a mass, it is only susceptible of diminution by means of putrid decomposition, and then it acts as a foreign body and as a source of infection, giving rise to accidents which are almost always mortal.

ART. 146.—*Tubular Pregnancy followed by Recovery and Three Natural Labours.*

By Dr. FABBRI.

(*Bull. delle Sc. Med. de Bologna*; and *British Medical Journal*, March 7, 1863.)

CASE.—This case is that of a woman at Ravenna, who, after having had four ordinary labours, became pregnant for the fifth time. The movements of the foetus were felt earlier than usual; the abdomen enlarged on the right side. At the ninth month, labour pains set in, and there was a sero-sanguinolent discharge from the uterus. These symptoms ceased in a few days; but the usual discharge after delivery and the secretion of milk continued several days longer. After this, severe symptoms set in, which confined the patient to bed, unable to move herself, for three months; they were relieved by blood-letting, aperients and clysters, and the application of emollient poultices to the abdomen. In the course of two years, the tumour, being diminished somewhat in size, became stationary. After this, she recovered sufficiently to have three successful pregnancies and deliveries. She died at the age of 55, of an acute disease, leaving directions that her body should be examined. Dr. Fabbri found at the right side of the abdomen a tumour lying behind the intestines; it was free from adhesions, but was attached to the uterus by the Fallopian tube and broad ligament. It was formed of a cyst containing a female foetus, apparently at the ninth month.

ART. 147.—*Case of Extra-uterine Fertilization, the Fetus being in the Sac of a Hernia.*

By M. W. MÜLLER, of Hohenwehr.

(*Allgem. Wiener Med. Ztg.*; and *London Medical Review*, May, 1863.)

CASE.—The woman was a strong person, aged 38, accustomed to very hard physical labour, in consequence of which she had become affected with an inguinal hernia of the right side. Under these circumstances she ceased to menstruate, and began to experience all the signs of pregnancy, except that the belly did not enlarge. The hernial tumour, however, steadily

increased in size, and on M. Müller's first visit to the patient he could detect by means of the stethoscope a sound exactly answering in character to a placental murmur. The diagnosis of a living extra-uterine foetus was confidently made, and, as the woman was at full term, an operation was proposed and assented to. An incision having been carefully made into the sac, the foetus was cautiously extracted, and found to be of full development and healthy. The cord was tied in the ordinary way, and divided. The superficial haemorrhage was easily arrested, the placenta removed, and a compress applied, when the patient was observed to become silent and pale; and the signs of an internal haemorrhage developed themselves. In spite of remedies the woman sank one hour after the conclusion of the operation. Chloroform was used in the performance of the latter. Unfortunately no necroscopic inspection of the body could be obtained, as the friends had religious scruples on the subject.

(B) CONCERNING THE DISEASES OF WOMEN.

ART. 148.—*A Case in which a Large Calculus was expelled from the Bladder of a Female through the Urethra by the Natural Efforts.*

By Dr. BEATTY.

(*Dublin Quarterly Journal of Medical Science*, May, 1863.)

CASE.—Eliza Simcock, aged 40, unmarried, by occupation a milliner, was always healthy until about a year ago, when she first complained of irritability of the bladder, and scalding in the passage of urine. At the end of a year she came up to Dublin from Waterford, where she resided; and, before seeking medical advice, she was persuaded, by some of her friends with whom she was staying, to take a dose of turpentine, which greatly increased the scalding, and produced haemorrhage from the bladder. She was now seen by Mr. Haffield, who shortly afterwards asked me to take her into the City of Dublin Hospital. She was admitted on the 28th of September, 1861.

She was at that time a most miserable object. She was attenuated to the last degree, her pulse fast and feeble, her sufferings constant. Night and day she had the bed-pan under her in the bed, an incessant incontinence of urine mixed with blood and pus, of a very abominable fetor, rendering it necessary; and every drop that passed caused intense agony. The vulva was highly inflamed, and pus flowed freely from the vagina. A quantity of sabulous matter, deposited from the urine, covered the orifice of the urethra and the labia, extending into the vagina. A warm hip-bath, and a draught with 30 drops of laudanum were ordered. These gave some slight relief, but no sleep.

Sept. 29th.—Still suffering too much to permit of any exploration of the bladder. Camphor, hyoscyamus, and potash ordered; and the hip-bath to be continued, with the anodyne at night.

Oct. 5th.—Some alleviation of her suff rings having been obtained, I passed a catheter into the urethra, but not into the bladder, for it was obstructed at the neck of the bladder by a solid body that occupied the canal. Being satisfied that there was a calculus in the bladder, I came the next day, Oct. 6th, determined to attempt its removal, when I found that, in the course of the night, after great pain and straining, and a dragging, tearing sensation in the urethra, she was suddenly relieved by something passing

away, followed by a large discharge of urine, pus, and blood. The body which had been expelled was one and a half inch long, and one inch broad, and weighed two drachms. It was rather soft and pultaceous on the surface, and was laid aside for further examination.

The bladder was now well washed out with warm water, injected through a gum-elastic catheter, and ten drops of dilute nitric acid in an ounce of water was ordered every six hours. The warm bath and anodyne draught to be given at night.

Oct. 7th.—The patient passed a tolerable night, and had the first sleep she had enjoyed for many weeks. The irritability of the bladder is much diminished, but the incontinence of urine still remains. The bladder was again injected with half a pint of warm water, which was retained without much pain, and then withdrawn. The bath and anodyne at night.

From this date she continued to improve steadily. The power of retaining the urine was gradually restored. The bladder was washed out every day, and the quantity of water thrown in was daily increased, and borne well. She was finally discharged, without any incontinence of urine, on the 20th of October.

On examining the calculus which had been expelled, it was found that the soft pultaceous matter that formed the outer coating was easily peeled off, leaving a calculus of a very peculiar form. It looked like a common pebble, from whose surface stood out all round a vast number of stony processes, forming an incrustation like stalactites. My first impression was that this was a foreign body that had been introduced into the bladder through the urethra, and had formed the nucleus around which these curiously-shaped deposits had been formed; but it was not so. My friend, Dr. John Barker, kindly examined the specimen for me, and I give his analysis as he furnished it to me.—“The body of the calculus is composed chiefly of oxalate of lime with some lithic acid. The stalactites on the calculus are nearly pure oxalate of lime. The envelope and crusts are formed of earthy phosphates; in the former is a quantity of animal matter.”

ART. 149.—*On Dysmenorrhœa and Sterility.*

By DR. GREENHALGH, Physician-Accoucheur to St. Bartholomew's Hospital.

(*Proceedings of the Obstetrical Society of London; Lancet, July 11, 1863.*)

After taking a rapid glance at the importance, frequency, and close connexion of these affections, Dr. Greenhalgh directs attention to the treatment of mechanical dysmenorrhœa, which a large experience had convinced him is by far the most frequent form of this complaint. Having compared the relative merits of dilatation and division of the os and cervix uteri in this affection, he expresses a decided preference in favour of the latter mode, for the safe performance of which operation he has invented an instrument which he proposes to call the “bilateral metrotome.” He states that he has used this instrument in upwards of thirty cases, without a single casualty, and in the great majority with the best results. After giving a description of this metrotome, together with a brief summary of the cases operated upon, and after enumerating the affections in which he has found the division of the os and cervix uteri most serviceable, Dr. Greenhalgh points out the necessity of attending to the patho-

logical states of the uterus frequently induced by the persistence of dysmenorrhœa, and concludes by giving a short account of the plan and remedies which he has found most beneficial for the cure of these several conditions.

ART. 150.—*On Supra-pelvic Hæmatocele.*

By M. GOSSELIN.

(*Gaz. des Hôpitaux*, Avril 19, 1863; and *British Medical Journal*, June 7, 1863.)

In the accounts given of this affection, the blood is generally described as being contained in the peritoneal *cul-de-sac* behind the uterus, and as forming a tumour capable of being felt through the rectum and vagina, and sometimes by pressure in the hypogastric region. Some cases, however, which have come under M. Gosselin's observation, have led him to the conclusion that the effusion from the ovary may (from some as yet unknown cause) be arrested *above* the pelvis, and form a tumour capable of being detected by palpation in the hypogastric region alone, and not by the vagina or rectum. One patient under his care presented on two separate occasions, after symptoms resembling those of peritonitis, a tumour of the size of a fist in the left side of the abdomen; it disappeared readily each time, without any discharge of pus by the alvine excretion, by the urine, or by the vagina. M. Gosselin proposes to term this variety "supra-pelvic hæmatocele."

ART. 151.—*Three Cases of Artificial Urethra.*

By Mr. I. BAKER BROWN, Senior Surgeon to the London
Surgical Home, &c.

(*British Medical Journal*, Oct. 10, 1863.)

These cases are very interesting as proving that it is possible, in cases where the urethra has been injured and has lost the power of retaining urine, to give the patient an artificial urethra. In two of the cases Mr. Brown found matters much facilitated by the use of his colleague Mr. Harper's instrument for retaining the catheter.

CASE 1.—This case is mentioned in my work on "Surgical Diseases of Women," under the head of Vesico Vaginal Fistula, of which it is the thirty-seventh case, at page 170. She came under my care in August, 1860, having a large vesico-vaginal fistula and an entirely obliterated urethra. In her case, I closed the fistula in the usual manner, and made an artificial urethra as much as possible in the track of the normal urethra. A catheter was then introduced, and kept in for a few days; after which the urine was drawn off every four hours.

The fistula healed nicely by the first operation; and a month after she could retain all her urine, and pass a little, but she had no power of completely emptying the bladder, nor had she up to the time when last I heard from her, and she was obliged to pass the catheter two or three times a day. I have no doubt that if I had had the advantage of Mr. Harper's instrument,

which I will presently describe, that I might have made a more serviceable urethra in this case.

CASE 2.—This is published in the *Lancet* of June 20th, 1863, p. 689. It was the worst case I have ever seen. There was such cicatrization of the vagina, that it was only about an inch long; there was a very large recto-vaginal fistula, a vesico-vaginal fistula, and the urethra and neck of the bladder had entirely sloughed away. By various operations, I healed the recto-vaginal fistula, and then operated on the fistula in the bladder, first puncturing the tissues under the arch of the pubes with a small trocar, rather to one side of the place where the urethra should be.

It required great delicacy of operation, as there was so little tissue. I then closed the fistula, and introduced a metal catheter, which was retained in position by the following instrument, which was invented by my colleague, Mr. Harper, and well made by Mr. Pratt, of Oxford-street. This instrument is very simple in its construction. It consists of an abdominal belt, made with hip and back lacings, and having in its front a piece of wood curved to fit the pubes, and well padded on the inner surface. The belt is retained steadily in its position by two thigh straps. Upon the piece of wood just over the pubic bones is attached an upright stem of silver plate, about an inch and a half high, and carrying at its upper end a ball and socket-joint; the side of this joint is perforated, and is fitted with a screw, which regulates the pressure upon the ball of the joint, and fixes the horizontal arm in any required position. This arm is a piece of silver rod, about seven inches long, and having at its lower end a pair of broad pincer-points, which serve to grasp the catheter. The rod slides in another pair of pincers, closed by another screw, which may be termed the female part of the screw of which the rod is the male, and one end of which is fixed to the ball and socket joint. It will be seen that the action is as follows:—The belt is fixed around the abdomen, and the pincer end of the instrument lays hold of the catheter previously introduced into the bladder. It can be kept in any required position, and moved to any angle, and by means of the two screws can be fixed firmly, and the wood of the abdominal belt becomes, as it were, a part of the catheter. The catheter which is used with the instrument is a small round one, and is open at both ends, so that it can be cleaned and kept open without the necessity of taking it out of the bladder. By means of this instrument, the catheter is kept steadily in the centre of the urethra, without any dragging whatever upon the walls. It is also introduced only just within the bladder, so that there is no fear of any irritation of the internal walls. Moreover, the patient moves about in bed whenever and wherever she pleases, without any fear of misplacing the catheter. It may be observed, that it is equally useful in certain cases where it is advisable to retain the catheter in the male urethra for any cause, and it prevents almost entirely the usual irritation which ensues. The action is exceedingly simple, and is much easier to observe than to describe.

After a few days, during which time the catheter was kept constantly in, the patient found that she could retain her water and pass it at pleasure; and she had also perfect control over her motions; and when I heard from her, a few days ago, she still continued perfectly well. This was a most satisfactory case, in which I succeeded beyond my hopes, but in which I should most likely have failed, but for Mr. Harper's instrument.

CASE 3.—The third case I will give more in detail, from the notes of it kept in the case-book of the London Surgical Home by my son, Mr. Boyer Brown.

E. G., aged 18, single, was admitted into the London Surgical Home on November 5th, 1862.

History.—Six years ago, she had a large stone removed from her bladder *per urethram*; it weighed $2\frac{1}{2}$ oz. 12 grains. During the extraction, the urethra was freely divided; and it was afterwards stitched up with silk sutures. For two years after she never saved any urine, but lately has been able to retain a small quantity during the day. On examination, the urethra and neck of bladder were found to be quite destroyed; and there was nothing to represent the meatus but a gaping orifice, which had not the least power of contraction.

Dec. 14th.—*Operation.*—The patient being under the influence of chloroform, and placed in the lithotomy position, I proceeded to pare the edges of the lower three-fourths of the orifice; and I then brought the pared edges together by four silver sutures, which I twisted with my fingers in the same way as I do in vesico-vaginal fistula. A catheter was introduced; but for many hours there was much trouble, owing to very free haemorrhage, which clogged up the catheter, and prevented it acting. On the 22nd, the catheter was removed, and she was allowed to pass her own water; but she was not able to retain much.

Dec. 31st.—I removed the sutures, and found the edges quite united. She was able to hold her urine for two hours at a time when up, but not when lying down. I was in hopes that the urethra would gradually gain strength, and that eventually she would be cured; and I accordingly sent her home, but she returned in a few months, saying that she could not retain her urine as well as when she left the Home. She was, therefore, re-admitted on June 25th, 1863.

July 2nd.—I proceeded to operate, which I did in the following manner: She was, as before, in the lithotomy position, and under the influence of chloroform. I pared the edges of the entire urethra, and closed it with silver sutures; but I first pierced with a thin-pointed knife under the pubes, a little on one side of the median line, until the knife entered the bladder. I then introduced a silver catheter, which was kept in position by Mr. Harper's instrument, and the patient was put to bed. The catheter was kept in until the 10th, never being removed, except on two occasions to be cleaned.

July 11th.—She passed her urine, which at first she held only a quarter of an hour, then half an hour; and she gradually went on improving, until, July 28th, she could hold it for four hours, and pass it at will.

These cases are interesting, as showing that cases which we hitherto considered incurable can be safely and effectively treated by using mechanical appliances after operation. At the same time, it is not probable that many cases like the last will occur in future, because stone in the female bladder will not hereafter be removed by dividing the urethra, but either by dilatation, crushing, or extraction through the vagina.

ART. 152.—*On the Use of Medicated Pessaries in the Treatment of Uterine Diseases.*

By Dr. TANNER.

(*Transactions of the Obstetrical Society of London* for 1862.)

The great value of a variety of local applications in the treatment of uterine disease seems to be insufficiently appreciated by the profession at large. This is somewhat strange, considering the time which has elapsed since Dr. Simpson specially directed attention to their exceeding utility. Yet it is certain that a large number of practitioners know of no agents which may be directly applied to the

uterus and vagina save the various kinds of caustics and injections. The latter are certainly of great benefit in many cases ; but it must be allowed that, even when properly used, they are often of only temporary service, since they cannot be kept in contact with the diseased part for more than a few minutes.

"The chief reason, I believe," says Dr. Tanner, "for the non-employment of medicated pessaries has been the difficulty of so making them that they can be efficiently applied by the patient herself. When formed of certain drugs mixed into a mass with lard and wax, they are either so soft that the sufferer cannot introduce them into the vagina ; or, on the contrary, they are so hard that they fail to dissolve, and are expelled in just the same condition as that in which they were introduced. Although I have now employed these agents very freely for some years, I have found very few druggists who would take the trouble so to make them that they were of any service. The difficulties just alluded to have, however, been overcome since Mr. White Cooper directed attention (*Lancet*, 28th June, 1862) to the utility of the butter obtained from the *Theobroma cacao nut*, from which chocolate is made, as the basis for ophthalmic ointments. This material possesses many valuable qualities, the chief being these :—It has an agreeable smell, and does not soil the fingers when handled ; it does not become rancid ; while, more particularly, though very firm, it has the property of becoming fluid at a low temperature. It is sometimes a little too stiff, but this fault is readily obviated by combining with it a little olive oil or glycerine. Pessaries made with cacao butter, though they have the consistence of wax while cold, are dissolved in the course of a few minutes when introduced into the vagina.

"If ophthalmic surgeons are much indebted to Mr. White Cooper for directing attention to the uses of this butter, obstetric physicians are under no less an obligation. For, although it had been used in America for making ointments for some time before this gentleman wrote of its merits, yet no physicians in this country were acquainted with its value, as far as I can learn from many inquiries.

"There are few uterine diseases in which the use of medicated pessaries may not advantageously form a part of the treatment. But they are more especially valuable in acute and chronic inflammation of the cervix uteri ; in internal metritis, with exfoliation of the lining membrane of the uterus ; in slight prolapsus or procidentia ; in cancer ; in all varieties of ovaritis ; as well as in many affections of the female bladder. By means of them the diseased parts may be kept constantly bathed in such drugs as mercury, iodine, lead, zinc, belladonna, opium, conium, &c. They are not only most efficacious in relieving pain, but they also shield the diseased and irritable surface from contact with the vaginal walls. Owing to this latter property, they are of great utility in healing excoriations about the labia uteri ; though, of course, part of the benefit derived from their use in these cases must be attributed to the absorption of the materials composing them. By their employment, moreover, the necessity for frequent examination of the morbid structures is greatly diminished.

"The following formulæ are given as examples of the way in which I generally prescribe these remedies. It is only necessary to premise that rather large doses of the drugs are necessary, inasmuch as absorption through the walls of the vagina is slow and uncertain.

"1. *Iodide of Lead and Belladonna Pessaries*.—℞. Plumbi iodidi, ʒij; extracti belladonnæ, ʒj; butyri cacao, ʒiv; olei olivæ, ʒj. Misce. Divide into four pessaries, and order one to be introduced into the vagina every night or every other night.

"2. *Mercurial Pessaries*.—℞. Unguenti hydrargyri, ʒiv—ʒij; butyri cacao, ʒiv; olei olivæ, ʒj. Misce. Where there is tenderness of the cervix uteri, one scruple of extract of belladonna, or two scruples of extract of conium should be added to the mass. Divide into four pessaries.

"3. *Lead and Opium Pessaries*.—℞. Plumbi acetatis, ʒj; extracti opii, gr. xij; butyri cacao, ʒiv; olei olivæ, ʒj. Misce. Divide into four pessaries. Order one to be used every other night.

"4. *Zinc and Belladonna Pessaries*.—℞. Zinci oxydi, ʒj; extracti belladonnæ, gr. xij—ʒj; butyri cacao, ʒiv; olei olivæ, ʒj. Misce. Divide into four pessaries. One to be used every night.

"5. *Iodide of Potassium and Conium Pessaries*.—℞. Potassii iodidi, ʒj; extracti conii, ʒiv; butyri cacao, ʒiv; glycerinii puri, ʒj. Misce. Divide into four pessaries, and direct one to be used every night.

"6. *Tannin and Catechu Pessaries*.—℞. Tanninæ, ʒij; pulveris catechu, ʒj; butyri cacao, ʒiv; olei olivæ, ʒj. Misce. Divide into four pessaries, and order one to be used every other night.

"In some diseases of the uterine cavity, attended with copious muco-purulent discharges or with haemorrhage, the greatest benefit may be obtained from the local use of astringents. Once or twice a-week a pessary made of tannin and the cacao butter, about two and a half inches long, and of the size of an ordinary stick of nitrate of silver, may be introduced up the canal of the uterus, and left there. It soon dissolves, and thus coats the whole seat of the discharge with the medicament, the coating remaining attached for many hours. Such a pessary, weighing about thirty-six grains, will usually contain from twelve to twenty grains of tannin. Of course, other substances—as alum, sulphate of zinc, dried sulphate of iron, &c.—may be employed in the same manner, if their use be indicated. This plan of treatment has none of the objections which apply to throwing fluids into the cavity of the uterus, a proceeding that is certainly not unattended with danger. There is no necessity, moreover, for dilating the cervix with sponge-tents prior to the introduction of the pessary; inasmuch as, when sanguineous or purulent discharges have long been present, the os and cervical canal will always be found sufficiently patulous to permit of the introduction of these astringent rods."

ART. 153.—*A Pessary Retained Thirteen Years.*

By Dr. KIDD.

(Dublin Medical Press, January 21, 1863.)

At a meeting of the Obstetrical Society of Dublin, held Jan. 10, 1862, Dr. Kidd exhibited a pessary which he had removed from the vagina of a woman on the previous day. She stated that he had himself introduced it for her thirteen years previously, and that she allowed it to remain with the greatest comfort to herself until within the last fortnight, when she began to experience a pain in the back, while some discharge took place from the vagina. The string had broken soon after it was put in, so that she was not able to remove it. The pessary was composition—a mass of tow covered over with India-rubber. He effected its removal by introducing one of the blades of Dr. Churchill's forceps, which he got above the mass, extracting it with the greatest difficulty. In another case he removed a pessary after a year, and on that occasion he had recourse to both blades of Dr. Churchill's forceps. The pessary was coated over with an immense mass of calcareous matter.

(c) CONCERNING THE DISEASES OF CHILDREN.

ART. 154.—*Operative Surgery in Children.*

By M. GUERSANT.

(Bull. Gén. de Ther., March 15, 1863; and British Medical Journal, May 16, 1863.)

M. Guersant has published the conclusions at which he has arrived after an experience of twenty years as surgeon to the Children's Hospital of Paris. He treats of the preparation of the patients; the performance of the operations; and the consecutive treatment.

1.—*Preparation of Patients.*—Certain malformations, especially imperforation of natural openings, must be operated on at birth without preparation. The treatment of others, which do not interfere with the performance of the vital functions and the child's growth, may be deferred to a later period; such as club foot, phimosis, webbed and supernumerary fingers, complicated hare-lip, cleft palate &c. In general, operations, even those which it is thought advisable to perform at an early date, are more likely to succeed if delayed a fortnight, three weeks, or a month, when there has been time for ascertaining whether the child thrives well, than if performed two or three days after birth. In the meantime, if there be danger of small-pox, the child may be vaccinated before being operated on.

If the necessity for operation be not urgent, it is a principle of good surgery to choose for its performance, both in hospital and in private practice, a period of the year when the smallest amount of disease prevails, and especially when there is no epidemic. There will rarely be opportunity for operating in the spring, as has been

hitherto advised; in general, the months of June, July, August, September, and even October, are to be preferred, as ordinarily presenting a more regular and less variable temperature than prevails at other seasons of the year. In these cases, the little patients should be vaccinated if this have not been already done; and even those who are fifteen or sixteen years old should be re-vaccinated as a precautionary measure. If this be not done, children who are in a fair way of recovery after operation may take small-pox and die. M. Guersant performed disarticulation of the thigh, for osteosarcoma of the femur, on a child five years old: the wound was almost cicatrized and recovery seemed certain, when the patient, who had not been vaccinated, was seized with small-pox and died thirty days after the operation.

It is of the greatest importance, before determining on an operation, that the surgeon should examine the patient with the most scrupulous attention, in order to ascertain that there is no internal disease or peculiar condition which may endanger the success of the operation and the life of the patient. Thus, it is extremely useful to know whether the child be liable to convulsions or of the haemorrhagic diathesis. M. Guersant has several times met with evidence of this diathesis in children. In one case of the kind he was obliged to defer excision of the tonsils in a little patient who had purpura haemorrhagica; and it was not until a course of astringents and iron had been persevered in for two months that he decided to operate; and even then the excision was attended by alarming haemorrhage. He advises that children subject to haemorrhage should be prepared for operation by the internal use of perchloride of iron for a week at least. In another case, a child from whom he excised the tonsils died of convulsions, to which it had been subject.

Certain preparations, according to the operation to be performed, are often indispensable. Thus, before opening an imperfect anus, the bladder must be emptied; before performing lithotomy, the rectum must be unloaded; and, in all operations, digestion must have been completed, and the bowels as freely evacuated as possible.

As to the *moral*, there is not much to be done as regards infants. Some children, however, may be led to submit to operation by being made to understand, that if any pain is to be inflicted on them, it is for the purpose of curing them. Most, however, must be operated on by surprise. In all cases, it is indispensable to have efficient assistants. If it be proposed to use chloroform, this should be sometimes attempted before the day of operation.

Performance of Operations.—In a tolerably large number of cases, anaesthesia may be dispensed with. In opening abscesses, sounding the bladder, examining the rectum, and removing small polypi from that region. M. Guersant generally operates without chloroform. In some operations, the use of this agent must be rejected, as in very nervous and impressionable individuals. In some such cases, local anaesthesia may be produced by the application of chloroform, or, still better, of ice, while in other instances, as in excision of the tonsils and in tracheotomy, no anaesthetic can be used.

There are many circumstances in which the use of chloroform is

strongly indicated; and after having employed it in the cases of 5000 or 6000 children, M. Guersant sees no reason to regret having done so. He uses Charrière's instrument; the anaesthetic may also be given on a sponge having a sufficiently large opening to allow the air to pass freely. He has never had to lament an accident from the use of chloroform. Very early age is not a contra-indication to its use; he has given it to very young subjects; among others, to two children less than four months old, on whom he operated for strangulated hernia. He has often used chloroform to render children insensible during examination; as when they refuse to open the eyelids in diseases of the eyes, and in certain very painful cases of coxalgia. He advocates especially the use of chloroform in operations which give rise to much pain, and at the same time demand precision in execution, such as lithotomy.

The performance of an operation on a child demands the most perfect knowledge of anatomy on the part of the surgeon; for, the parts being of small extent, the incisions must be limited to the strictly necessary dimensions. As examples of the necessity of attending to this precept, he mentions tracheotomy and lithotomy in children two years of age; and says that it is plain, although many ignore the fact, that operations are more difficult in children than in adults. In certain cases, the precept which recommends the surgeon to operate slowly must be departed from; for children endure pain for a less time than adults, and losses of blood are generally more dangerous in them. Thus, the tonsils must almost always be removed very rapidly. In some cases, tracheotomy must be performed quickly, in order to prevent the patient from dying under the surgeon's hands, especially if the veins have been opened and pour out much blood.

Consecutive Treatment.—The first point to be attended to is the ligature or torsion of vessels; and, when only a small number of vessels have required to be tied or twisted after an amputation of one of the large limbs or after extirpation of a tumour involving a great loss of substance, M. Guersant advises that the dressing should be delayed for half an hour or an hour after the operation. He says he has always followed this plan with advantage. This precept, which was given by Dupuytren, has the advantage of allowing time for the re-establishment of the circulation, and obviates the necessity of removing the dressings to arrest haemorrhage which has come on after the application. If it be necessary, after certain operations, to plug the wound with perchloride of iron, this should be well diluted with water, to avoid sloughing.

M. Guersant, following the advice of Dupuytren and Lisfranc, almost always renewes the dressings on the day after the operation. The removal of the charpie and lint, the bandages and sutures not being interfered with, prevents the danger of many accidents. Erysipelas is prevented, by the removal of charpie impregnated with blood and serosity; pus, if it have formed, is allowed to escape from between the lips of the wound; and, if the edges of the wound have been strangulated by the sutures being too numerous or drawn too tight, they can be removed or loosened. If there be erysipelas, M. Guersant has often seen benefit derived from the application of

collodion. This, with the internal use of tincture of aconite, sometimes prevents purulent absorption—a very rare accident in children, but which occasionally occurs.

If the wound become pale and grey, the application of charpie soaked in solution of chlorinated soda is very useful; and the application of pure lemon-juice has, in M. Guersant's hands, given a healthy aspect to an unhealthy looking wound.

General treatment is often of still more importance than local treatment. Usually if there be no convulsions (an accident which rarely occurs even after the most severe operations), or if there be no special contra-indications, a nutritious diet should be allowed from the day of operation. Whenever it is possible, infants should be put to the breast from the first day, rather than be fed from a bottle; they should be allowed to suck as much as they desire, at intervals of two hours. For other children, the food should at first be liquid, and consist of milk and beef-tea; after the first day, wine may be given. A return should be gradually made to the child's ordinary food, to which may sometimes be added chocolate, coffee, quinine, and other tonics. This regimen is indispensable, unless consecutive internal disease set in and demand on the part of the surgeon the amount of medical knowledge necessary for detecting and properly treating them—without which there is no success in surgery. We must, M. Guersant says, never forget that the operator must be a physician before operation, a surgeon during its performance, and again a physician to terminate and even to bring to a successful issue many surgical operations.

Finally, all the means which have been here described may fail, if the hygiene of the patients be neglected. Thus, all things being otherwise equal, children who are operated on in the town, in the homes of parents in good circumstances, and who reside in well ventilated and warmed rooms, according to the indications of the case, are in better conditions for recovery than those who are operated on in hospitals, where numerous patients are collected in one room, of which the air is, in spite of all that can be done, more or less vitiated.

ART. 155.—*Practical Observations on the Treatment of Purulent Ophthalmia in Infants.*

By Mr. WORDSWORTH, Surgeon to the Royal London
Ophthalmic Hospital, &c.

(*British Medical Journal*, May 2, 1863.)

The treatment described is that almost always adopted at the Royal London Ophthalmic Hospital, and usually, it appears, with the most satisfactory results. Mr. Wordsworth says:—

"Suppose, then, a case of the disease, in which it is confined to redness of the conjunctiva, especially of the lower lid, the mucous membrane being somewhat villous and prominent, and attended by some discharge of mucus or pus, and tears. This is the first stage.

How may such be best treated? I should be content to have the eyes bathed frequently with warm water, by means of a small piece of linen cloth, to wash away the discharge, and afterwards, with an astringent lotion, containing four grains of alum in an ounce of water, and then wiped dry, and a little spermaceti-ointment smeared on the edge of the lower lid, and the child put back to bed. A tea-spoonful of castor-oil may be given, if it have not already taken some aperient. If in a few days this does not terminate the treatment, I usually drop a solution of two grains of nitrate of silver in an ounce of distilled water on the conjunctiva twice a day. This rarely fails to produce a marked improvement in a few hours, especially if the discharge have become thin; the child opens its eyes and bears the light without inconvenience.

"If the case have passed into the second stage—the lids being *red*, swollen, tense, and *shining*; the conjunctiva of the globe swollen, and raised round the cornea; the discharge profuse; and the child hot, fretful, and restless—I apply a leech to each upper lid, and administer a grain of calomel at once. By means of the leech, the swelling is soon reduced, so that the cornea may be examined; and, independently of the antiphlogistic effect of loss of blood which is thus gained, the application of remedies to the conjunctiva can be more easily effected.

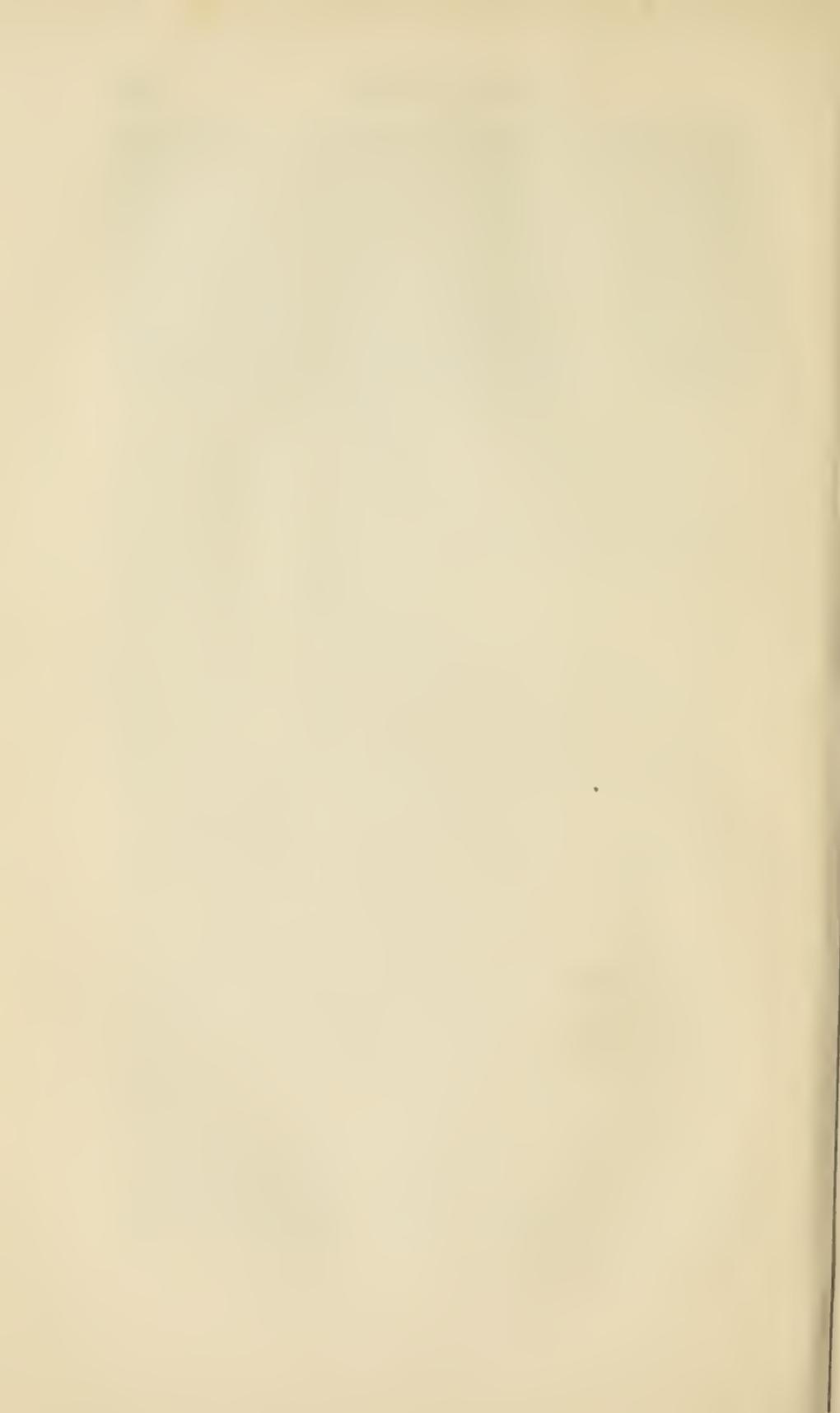
Fomentation of the lid is continued for some time, to encourage bleeding, and soothe the inflamed structures. The child will usually be considerably reduced by the bleeding; and, being also relieved of pain, soon falls asleep. If the calomel do not soon open the bowels, a small dose of castor-oil may be given. The fomentation is renewed at short intervals; and, as soon as the case approaches the conditions of the first stage, the weak alum-lotion is substituted for the warm water; and this again supplemented by the nitrate of silver drop, as this ceases to effect a cure.

"I constantly find that the subjects of this affection are immature children of seven or eight months; and that the mothers are feeble and delicate women, incapable of providing a full supply of good milk. Under these circumstances, I prescribe quinine and iron for the mother, and thus indirectly influence the child.

"The late Mr. Tyrrell introduced the practice of dividing the chemotic swelling by a series of radiating incisions round the cornea—a practice that since his time has, I believe, fallen into disuse. It is long since I have known it employed; but in his practice it seems to have been so satisfactory, that one could scarcely reconcile the disuse of it with one's duty, if a suitable case were presented. Yet I have no reason to think the practice of his successors at the hospital is less successful than that adopted by this excellent surgeon.

"From considerable opportunities, I am persuaded that the plan above sketched is most satisfactory and efficient for the treatment of this important disease. I do not doubt that, if more generally employed, it would conduce to diminish materially, if not to entirely check, the sad and irremediable consequences of purulent ophthalmia. It also has, to my mind, a great advantage over the cruel

and unnecessary practice of applying stimulants to the tender and acutely sensitive little patients; and assuredly, in the cause of humanity, we should endeavour to avoid the infliction of an unnecessary pang, especially when we remember how acutely a sympathizing mother suffers in witnessing these painful cases; and how heroic she must be, or neglect to apply the painful remedy that has been prescribed, when she sees the agony that its employment causes to her babe. Who can wonder, then, that such painful treatment is not fully carried into effect; and that, consequently, much risk is incurred by the attendants for the sake of saving the child's sufferings? Nor should we forget that the mother's health materially reacts on the child's; and, consequently, how necessary it is that she should be spared these painful emotions."



REPORTS

ON THE

PROGRESS OF THE MEDICAL SCIENCES.

June—January, 1864.

THE intention of the following Reports is to pass in review the principal additions to each department of Medical Science which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.

I.

REPORT ON PRACTICAL MEDICINE.

A Practical Treatise on the Diseases and Infirmitiess of Advanced Life.

By DANIEL MACLACHLAN, M.D., F.R.C.P., late Physician and Principal Medical Officer to Chelsea Hospital, &c.

(8vo. London: Churchill and Sons. 1863. pp. 719.)

THE diseases of declining and advanced life, as compared with the diseases of infancy, childhood, and maturity, have been comparatively neglected; and, therefore, a work like the one under notice is not out of season. Moreover, Dr. Maclachlan must be allowed to have special opportunities for discharging in a satisfactory manner the task which he has undertaken, for, as physician and senior medical officer to Chelsea Hospital for upwards of twenty years, he has always had under his eye at least 500 persons, few of them below 50 years of age, and most of them ranging from 60 to 90, or even upwards. Nor have these opportunities been neglected. At the same time, we are obliged to express a feeling of regret that Dr. Maclachlan has not used these opportunities so as to make his work savour more of the bed-side and less of the study. In this way, we think, he would have met with more favour in these days of high pressure, in which it is difficult to find time to deal with anything except the very barest essentials.

Dr. Maclachlan, we are glad to find, is very far from believing that human life must come to an end at threescore years and ten. He agrees with Hufeland in thinking that almost all those kinds of deaths which take place before the 100th year are brought on artificially—that is to say, by disease or accident: and, so thinking, he concludes that life will be very much prolonged if we will only believe that it may be so prolonged and act accordingly. This is comforting doctrine, and yet not too comforting: for it is confirmed by the fact that the age of the Chelsea pensioners far exceeds the average age, although the majority of these men were the subject of grave infirmity and disease before admission.

With respect to the diseases of the different periods of old age and their general characteristics, Dr. Maclachlan says:—

“ As maturity insensibly glides into decline, so the diseases of the first period of old age are very similar to those that more especially

appertain to that stage of life and present analogous features. Dyspeptic, rheumatic and gouty affections; renal diseases, including albuminuria and gravel, are then frequent. By-and-bye, the predominance of the venous circulation, with the rigidity of the arteries, encourage congestion in the different organs and passive haemorrhages. From these causes and others proceed haematemesis, melæna, haematuria, varices of the bladder and rectum—all common diseases of the declining and more advanced periods of life. Cerebral and urinary maladies now also prevail, and are superadded to one or more of the disorders first mentioned. Sanguineous apoplexy, softening and atrophy of the brain and spinal marrow, with their immediate result, paralysis, are among the most frequent diseases of the aged, and are remotely or directly connected with senile degeneration of the arteries.

"Gradually, diseases of an inflammatory kind participate in the decaying energy of the vital force, and evince this influence by a corresponding inactivity, by frequently presenting a subacute or even chronic character from the commencement; by the proneness towards an asthenic type, and in more active attacks by the rapid disorganization of the structures implicated. The pain and redness accompanying inflammation are usually, but by no means invariably, less intense. Robust octogenarians sometimes present examples of acute sthenic inflammation in its true pathological characters in a genuine form, with high constitutional disturbance. More generally, however, in the later epochs of life, an opposite tendency is observed; the inflammation is of a congestive character, and the febrile re-action slightly manifested; the redness in erysipelas, for example, is often of a dull-brown or livid hue; the bullæ of this disease contain a sanious liquid, and though dry externally, are pulpy or less tense than at other periods of life, while there is often little general re-action. Similar phenomena are frequently observed in herpes zoster—a not uncommon and sometimes severe affection in the aged, the vesicles containing a dark sanies, and the skin underneath becoming gangrenous. Edema is now a common accompaniment and sequela of all the phlegmasiae. In the cellular tissue inflammation rapidly assumes a diffuse character. Gangrenous abscesses speedily form; and when the inflammation in other cases is limited by the effusion of lymph, still this disposition prevails. What at another period would be a common boil now turns out a carbuncle, and too often places the life of the aged subject in great peril. Elsewhere, in the serous and mucous membranes, the same results are observed, occasioned by, and indicative of, the decaying vigour of the system. The inflammation, when acute, is very often of an asthenic kind, accompanied by low fever, a dark dry tongue, much prostration and stupor, or delirium, and speedily ends in destruction or injury of the membrane affected. Effusion of lymph, which in the instance of inflammation of the serous tissues, may be regarded as the natural process of cure, is often replaced by serous, sanious, or purulent matter; and where the attempt at restoration seems to have been vigorously begun, we find these inferior products in unusual quantities mixed

with the more organized secretion. A few hours are often sufficient to fill the chest with purulent or more generally serous or seropurulent fluid, in otherwise slight and obscure attacks of pleurisy; œdema of the lungs frequently accompanies bronchitis, and the tendency towards serous discharge may be observed wherever the mucous membranes are inflamed by the infiltration of the subjacent cellular tissue. Resolution from inflammation of the serous or mucous membranes is usually slow and imperfect. Chronic bronchitis and chronic inflammation of the whole or portions of the genito-urinary tract is one of the most common attendants on old age.

"Thus diseases accumulate with the progress of years. The innumerable maladies that openly or secretly besiege the frame leave sequelæ, are engrafted upon each other, and present themselves associated and complicated in such wise as to diversify the character of the symptoms and modify the prognosis and treatment. As life still further advances, and the silent degeneration of the tissues proceeds, man becomes more and more obnoxious to a host of organic diseases, all tending towards the end. And it is in old people especially that the anatomist encounters the most singular modifications of structure, and the pathologist the most perfect and varied specimens of disease, benign or malignant, in the brain, heart, lungs, and other viscera. So common are structural lesions in the decline of life, that long-abiding so-called functional disturbance of an organ is very often dependent upon some associated anatomical change in one or more of its tissues."

The account which Dr. MacLachlan gives of these several diseases is clear and exhaustive, and the whole work, though long and too much in the conventional text-book style, is one which cannot fail to supply a good deal of sound information where such information is certainly lacking.

The Fifth Report of the Medical Officer of the Privy Council.

(Blue-Book. 1863.)

MR. SIMON'S Fifth Report of the proceedings of the Medical Department of the Privy Council in 1862, is of peculiar interest and importance. It is devoted to the following subjects:—

- (1.) Vaccination.
- (2.) The Supply of Vaccine Lymph.
- (3.) Industrial Diseases :
 - (a) Occupations which have to do with Arsenical Green.
 - (b) Occupations which have to do with Phosphorus.
- (4.) The Cotton Famine.
- (5.) Cattle Diseases in relation to the supply of Meat and Milk.

I. *Vaccination.*

The Privy Council inquiry into the state of public vaccination in England has now extended to half the kingdom. The conclusion to which this investigation leads, and which subsequent reports will

most probably rather strengthen than weaken, is this: that the intentions of the Legislature in respect to vaccination are but very imperfectly fulfilled, and that the public defences against small-pox are in great part insufficient and delusive.

In the statutes which during the last twenty-three years have been enacted with a view to the extermination of small-pox in this country, the immediate intentions of the Legislature have been as follows:—

1. That thoroughly good vaccination, provided at the public expense under proper and well-notified arrangements, should everywhere and gratis be within reach of persons who may choose to avail themselves of it.

2. But of course subject to the above—that it should be obligatory on parents to have their children vaccinated, health permitting, within three calendar months from birth—not necessarily by the public vaccinator, but, if not by him, then by some other medical practitioner whom the parent may select (and then must himself pay) for the purpose.

3. As machinery for enforcing this obligation—that the fulfilment or non-fulfilment of the obligation should be ascertainable by reference to local registries kept by the respective registrars of births and deaths—whom also the law requires to notify to parents the obligation which it has imposed on them; that penalties for non-fulfilment of the obligation should be recoverable by summary proceedings from parents who, after notice, are in default; and that especially boards of guardians in their respective unions and parishes should systematically cause such proceedings to be taken.

With regard to the non-accomplishment of these intentions of the Legislature.—it is true that, owing to the utter and universal failure of the intended register of vaccination, the failure of the other parts of the system cannot be quite accurately measured. But, again and again, the inspectors have come upon cases where, quite apart from the register, there was conclusive evidence of extreme local neglect of vaccination. Among the elementary schools which they visited, schools were numerous where the unvaccinated proportion of scholars was from 20 to 30 per cent. of the whole; in more than a few cases it was from 30 to 40 per cent.; in some it was from 40 to 50 per cent.; and in one case (that of Penn, in Buckinghamshire) was as high as 55½ per cent. So again among the young inmates of workhouses, though under the very eye of boards of guardians, the inspectors found similar evidence that vaccination was not duly performed;—for among 38 workhouses which Dr. Seaton inspected, there were 8 where the unvaccinated proportion of children ranged from 20 to 38 per cent.;—and among 74 workhouses which Dr. Stevens inspected, there were 20 where the unvaccinated proportion of children was from 20 to 34 per cent. The less exact evidence furnished by the registers of vaccination justifies a conviction that in many cases the local neglect is greater, even very considerably greater, than those discreditable figures would suggest:—for there are whole unions where there is no reason to suppose that any important number of vaccinations is performed by private practitioners

and where yet the number of vaccinations performed by the public vaccinators does not equal a third of the number of births,—unions, even, where the public vaccinators' vaccinations are as few as 19, 18, 17, 12, and 7 per cent. in proportion to each hundred of births;—and there are instances of districts remaining for long periods, even in one instance as long as three years, without a single public vaccination being performed.

Evidently, then, the fundamental object of the Legislature—the object of ensuring that every infant (its health permitting) shall be vaccinated within the first few months of life, is very imperfectly attained. And the machinery which the Legislature established for the purpose of enforcing the fulfilment of that object is evidently not operative for its purpose. In explanation of which fact, there are three reasons to be stated:—1st. That boards of guardians, except when influenced either by panic of small-pox or by formal remonstrances on the subject, have very rarely done all that they might do, and in many cases have done nothing, to set the machinery in motion. 2nd. That the machinery itself is so imperfect that, even when used with good will, it must be insusceptible of exact working. And 3rd, that the compulsive provisions of the law (perhaps leniently intended by the Legislature to be ambiguous and feeble, rather than clear and stringent) have in different places been subject to different magisterial interpretations, and have in all places been found insufficient for thoroughly accomplishing their supposed object.

It remains, however, to be observed, that imperfect stringency for compulsive purposes is not the only, nor in Mr. Simon's opinion the principal, defect of the present law. The condition which assuredly the Legislature intended to be a condition precedent to any enforceability of vaccination,—the condition "that thoroughly good vaccination provided at the public expense, under proper and well notified arrangements, should everywhere, and gratis, be within reach of persons who may choose to avail themselves of it," is hitherto very imperfectly realized. Both with regard to existing local arrangements for gratuitous vaccination, and with regard to the required notification of such arrangements, the public has at present ample reason to complain that the conditions are not fulfilled under which alone a system of compulsory vaccination can be tolerable. Partly through the continuance of faults* to which Mr. Simon adverted in his Second Annual Report, as faults which the Privy Council regulations of December 1859 were intended to correct, but still more (as described in Mr. Simon's last annual Report) through the general ill-devisedness and futility of those contracts which pretend to regulate the duties of vaccinators, it results—not only that to a very great extent vaccination is given in a most impunctual and irregular way, often without proper local notification—but moreover, that thoroughly good gratuitous vaccination is by no means uniformly

* The inferior quality and extreme subdivision of public vaccination, the latter rendering it often impossible to maintain proper local supplies of lymph.

given by those authorities whom the Legislature has made responsible for giving it. And under these circumstances it would manifestly be unjust to punish, for non-compliance with the law, parents whose children are not vaccinated.

Mr. Simon therefore has had no alternative but to submit to the Privy Council for consideration, that the laws now in force for the purpose of extirpating small-pox are not likely to accomplish their object, and that the system established by law for the provision of public vaccination works in an unsatisfactory manner.

II. Supply of Vaccine Lymph.

The Privy Council, during 1862, took special means to satisfy themselves that the lymph which was being supplied under their auspices was lymph of undiminished efficiency. For this purpose, Mr. Robert Ceely, of Aylesbury, was instructed to inspect all the sources whence lymph is contributed to the National Vaccine Establishment. Mr. Ceely's inspection did not lead him to recommend any change of the present sources of supply. On the contrary, in those stations which (as being most frequented) gave him the best opportunities of forming conclusions on the subject, he "met with abundant evidence of the perfectly satisfactory character of the lymph there in use." In reporting this judgment of Mr. Ceely's, Mr. Simon states that he cannot over-state the importance which he attaches to it. For to Mr. Ceely, more than to any man since Jenner, the medical profession of this country is indebted for its knowledge of the natural history of vaccination. And in Mr. Simon's opinion there is no living person on whose testimony the public could more entirely rely as to the quality of the lymph which the Privy Council are responsible for distributing.

III. Industrial Diseases.

(a.) The inquiries instituted under the direction of the Privy Council into the occupations which have to do with arsenical green were conducted by Dr. Guy :—

The *industrial applications* of the pigment are principally two :—first, in the colouring of various papers, either of the sorts used for ornamental wrapping and lining, or of the sorts used for hanging in rooms ; secondly, in the colouring of artificial leaves, fruits, and flowers. The pigment is also used, though less considerably, by chromo-lithographers and toy-makers. It is likewise used by house-painters. It is used as a colour for tarlatanes. And most culpably, though only to a small extent, it is used by the makers of cake-ornaments and coloured confectionery. So far as concerns the health of persons employed, only the first two occupations require particular notice : but, in them, there is very considerable suffering.

Thus, for instance, in visiting one of the larger establishments where artificial leaves are made—an establishment employing about 100 young women, Dr. Guy found that more or less suffering was almost universal among the workpeople. The skin-affection, which hardly any of them escaped, and which sometimes would begin after

even so little as one day's working, occurred in different degrees; sometimes as mere erytheina, sometimes as an eruption of clustered papules, vesicles, or pustules, sometimes as more or less destruction of skin by process of ulceration or sloughing. The fingers, which (often with accidental chaps and scratches on them) are the immediate agents in industry; the face; the neck, especially about the roots of the hair; the flexure of the arms; the axilla; the genitals; these were the parts where the skin-disease had most shown itself—parts, namely, to which the arsenical dust is most largely applied, and parts where it is likeliest to be retained, and parts where the cuticle is most thin and penetrable. The suffering from these skin-affections had been in many cases very considerable; for instance, in several cases the mere pudendal affection had been such that the sufferers could not bear to sit down. But the skin-affection was only a minor part of the suffering. Of 25 of the sufferers whom Dr. Guy examined, nearly all showed signs, often highly developed, of chronic arsenical poisoning; excessive thirst; nausea, and loss of appetite; sickness and vomiting, often with pain in the stomach; palpitation and shortness of breath; debility, fever, headache, drowsiness, dimness of sight, and tremblings, nervous twitchings or convulsions. "Of the whole group of 25 females," says Dr. Guy. "four only did not complain of weakness; and of the remaining 21, there were, again, only 4 who did not describe the weakness as extreme. Febrile symptoms were present in no less than 20 cases, in five of which they amounted to feverishness, while in the remainder they were described as fever. Headache, again, was an almost universal symptom. It was absent in two cases only, and was described as not severe in only three cases. Dimness of sight was complained of in two-thirds of the cases. In one the eyes were very sore, in another the sight was greatly impaired. Drowsiness was present as a marked symptom in every instance but one, and in two cases only was it spoken of as a trivial circumstance. Tremblings and convulsive twitchings were present in 7 cases out of the 25, and in one other instance well-marked convulsions were present." It is wonderful that, out of such a group as this, deaths are not constantly occurring in a way to demand the coroner's investigation. But whatever may be the explanation of the fact, only one such investigation seems to have been made.

The restrictions under which this injurious, and perhaps not indispensable, branch of industry ought alone to be carried on are, in Mr. Simon's opinion, as follows:—First, as a cardinal rule (the enforcement of which would make it an interest of each establishment to enforce various improvements in detail) the employment of any person while presenting even in the slightest degree any sign of general arsenical poisoning should be absolutely prohibited; secondly, by scrupulous cleanliness of the workplace and workers, by ventilation of the workplace, and, where necessary, by special apparatus, the best known means should be used to prevent the diffusion of arsenical dust in the common atmosphere of the workplace, and to reduce the worker's liability to receive the dust upon his hands.

(b.) Dr. Bristowe conducted the Privy Council inquiry into the

occupations which have to do with phosphorus. The utilization of phosphorus in various popular contrivances for producing instantaneous light has, for the last 30 years, been a special industry. And with the growth of this industry a new disease has come into existence. About 18 years ago, observations began to be published to the effect that, of the workpeople who in the new industry were exposed to the vapours of phosphorus, some, but apparently not a large proportion, suffered, in consequence of the exposure, a peculiar disease of the jaw-bones.

From the inquiry which has now been made under the directions of the Privy Council, into the circumstances of the phosphorus-industry in England, it appears (as had been anticipated) that the jaw-disease is not of frequent occurrence. Dr. Bristowe, after visiting all the known match-making establishments in England—57 establishments, employing about 2500 hands, has not been authentically informed of more than 59 cases (past or present) of jaw-disease. And though doubtless in some instances information has been withheld from him by manufacturers who feel that their experience has not been creditable to them—so that the total production of jaw-disease during the last 30 years has been greater, perhaps considerably greater, than these numbers express—yet very probably there would be no under-statement of the truth in applying these numbers to the *present time*, and in assuming that now (with the improved arrangements which a less favourable early experience has induced all respectable manufacturers to adopt) not more than two or three cases of the jaw-disease are annually produced in England. Almost certainly, however, these few cases occur under circumstances which the manufacturer ought not to let exist, and which—if dangerous occupations were subject to official superintendence—would of course be forbidden to continue. “For,” as Dr. Bristowe observes, “while it is the easiest thing in the world for a factory to be made a hot-bed of disease, it is little less easy, by adopting precautions of the simplest and most obvious description, to render the occurrence of jaw-disease therein a rare and quite exceptional occurrence.”

Those precautions of the “simplest and most obvious description,” to which Dr. Bristowe refers as essential for the phosphorus-worker’s safety, and respecting which he gives in his report all needful particulars, are, in principle, two :—first, that the organization of the establishment should be such as not at any time to expose to phosphorus-fumes more workers than must necessarily be exposed to them, and such as to restrict necessary exposure within the narrowest possible limits of time and intensity; secondly, that the establishment shall have suitable ventilation—including, of course, special ventilating arrangements for those processes of the manufacture which cause the greatest evolution of fumes.

IV. *The Cotton Famine.*

Three inquiries were instituted in the course of the past year, in connexion with the health aspects of the cotton famine, by the Privy Council. One of these inquiries had reference to

the health of the distressed operatives and was conducted by Dr. Buchanan; another referred to the health of the girls of the sewing schools at Preston, and was also conducted by Dr. Buchanan; and a third, relating to the nourishment of the distressed operatives, was conducted by Dr. Ed. Smith. An abstract of the results of the first of these inquiries was given in our last volume. The second inquiry arose from a report that the girls in the Preston sewing schools were suffering markedly in health, a report which Dr. Buchanan's investigation showed to be in a great measure erroneous. The third inquiry included the whole subject of dietaries for the poor.

The Economics of Diet.—The questions which Dr. Ed. Smith was instructed to investigate were as follow:—(1.) What is the least cost per head per week for which food can be bought in such quantity and in such quality as will avert starvation diseases from the unemployed population? (2.) What, with special reference to health, would be the most useful expenditure of a weekly minimum allowance granted exclusively for the purchase of food? (3.) What, with the same special reference, would be the most useful expenditure of small additional sums, say 25 and 50 per cent., or the minimum granted for the same exclusive purpose? Dr. Smith enters very minutely into the whole subject of dietaries for the poor, and his report is of great value on all that relates to the economics of diet. The following are his conclusions in reference to the first question submitted to him:—

1. When food is purchased and cooked separately, the line between sufficiency and insufficiency in adults may be drawn at about 2*s.* per head weekly.

In the case of single persons living separately, it would incur a risk to limit the amount to 2*s.* weekly in all cases, and the minimum amount to be spent weekly in food should be 2*s. 3d.* for women, and 2*s. 6d.* for men.

2. In the case of man and wife without children living with them, the minimum amount should be 4*s. 9d.* weekly.

3. The case of families must be considered chiefly in relation to the age of the members, for it is manifest that a child of six years of age requires less food than a youth of 16 years of age, and in this respect the present system of averages in the supply of relief according to, and diminishing per head with, the number of members in a family, is most defective.

The minimum allowance to the husband and wife should be 4*s. 6d.*; to each child over 12 years of age, 2*s.*, and to all others 1*s. 6d.* per week, except in the case of infants at the breast, when, if it be the only child, 1*s.* weekly should be allowed, but if there be other children no allowance will be necessary.

4. When food is prepared in large quantities and supplied at cost price, the allowance may be reduced, probably, to 2*s.* weekly for each person over 16 years of age, 1*s. 6d.* for each over 10 years of age, and 1*s. 3d.* for each under 10 years of age, excluding infants at the breast. It is also probable that the food thus supplied would be more nutritious in quality, better cooked, and

eaten hotter than would occur under a system of separate cooking.

In answering the second question, Dr. Smith subjects to examination the economic and nutritive value of the foods chiefly in use among the operatives, and suggests certain dietaries for the unemployed operatives. Existing analyses of food, he holds, are insufficient. We must take averages from fair samples, as of a whole beast, for example, in reference to meat. He refers to the carbon and nitrogen only for comparison with the excretions. He quotes also the free hydrogen, reckoning it as carbon. The adult individual requires 30·100 grains of carbon and 1,400 grains of nitrogen weekly. *Men* require daily, on an average, 4·588 grains of carbon and 215 grains of nitrogen; *women*, 3·758 grains of carbon and 155 grains of nitrogen. The daily excretion of carbon is from 7·85 oz. to 12·19 oz., of nitrogen, 200 grains. We quote the following summary of the different nutritive and economic value of foods:—

Food.		Cost.	Carbon.	Nitrogen.	Remarks.
		d.	grains.	grains.	
Bread	... ... lb.	1½	1968	92	
Flour	... ... lb.	1¾	2636	120	Multiply by 1·4 to find the quantity of bread.
Oatmeal	... ... lb.	1¾	2768	140	
Peas	... ... lb.	1½	2688	252	3 times cheaper than bread in carbon; $\frac{1}{3}$ cheaper than bread in nitrogen; but not equally assimilated.
Rice	... ... lb.	1½	2688	70	Cheaper than flour if 1d. per lb. Must eat more.
Sago	... ... lb.	...	2552	1·7	
Barley	... ... lb.	2	2656	91	
Potatoes	... ... lb.	$\frac{5}{8}$	760	24	Requires $3\frac{1}{2}$ times to be equal in carbon to flour; 5 times to be equal in nitrogen to flour; $10\frac{1}{2}$ times to be equal in nitrogen to peas.
Turnips, swedes	lb.	$\frac{1}{2}$	304	15·3	
" white	lb.	...	175	1·2	
Carrots	... ... lb.	$\frac{1}{2}$	384	14	
Succulent vegetables	...	...	420	14	
Sugar	... ... lb.	4½	2768	...	Much dearer than starch, with equal nutritive values.
Treacle	... ... lb.	1½	2240	...	Much cheaper than sugar.
Butter, fresh	... ...	...	470½	...	{ A very dear fat.
" salt	... ...	...	45½	...	
Lard and dripping	... ...	...	5320	...	
Bacon, green	... ...	4	4265	78	The cheapest fat.
" dry	... ...	...	4753	96	
Meat, average for these dietaries	...	...	2580	160	
Bones (for liquor)	lb.	1½	783	24	
Liver	...	...	1226	210	
Herrings, dried	... lb.	...	1435	840	The cheapest animal food if it were more digestible.
Milk, new	... pint	1 to 1½	546	43	
" skimmed	pint	$\frac{1}{2}$ to $\frac{1}{4}$	438	43	Is equal to new milk when fat is added.
Butter-milk	... ...	$\frac{1}{2}$	420	43	
Cheese	... ...	5	2657	316	
Tea	... ... oz.	3	...	10	
Coffee	... ... oz.	$\frac{3}{4}$	...	5	
Eggs, weight 1¼ oz. each.		$\frac{1}{2}$	166	15½	

The estimated cost of the different dietaries suggested by Dr. Smith is founded on the lowest retail prices for private, and wholesale prices for public dietaries. He quotes the following retail prices :—

Bread $1\frac{1}{2}$ d. lb., flour $1\frac{3}{4}$ d. lb., oatmeal $1\frac{3}{4}$ d. lb., rice $1\frac{1}{2}$ d. lb., peas $1\frac{1}{2}$ d. lb., potatoes 1s. 20 lbs., carrots and turnips $\frac{1}{2}$ d. lb., onions $\frac{3}{4}$ d. lb., beef 6d. lb., bacon (American) 4d. lb., liver $3\frac{1}{2}$ d. lb., cheese 6d. lb., skimmed milk $\frac{1}{2}$ d. pint, buttermilk $\frac{1}{4}$ d. pint, mutton fat 5d. lb., mutton suet 6d. lb., sugar 4d. lb., butter 10d. lb., treacle 2d. lb., tea 3d. oz., dripping 6d. lb.

As a general principle Dr. Smith assumes that three meals per day will be taken, and as a model dietary premises the following :—

Breakfast : milk, oatmeal, and bread, with bacon or herring, if possible.

Dinner : meat or bacon, or herring with bread, and fresh vegetables, cooked in various ways, and if possible cheese or pudding.

Tea : tea or coffee, milk, oatmeal, and bread.

Whenever tea or coffee is taken the cost will be greater, and consequently for the same cost the nutriment will be less ; and hence, if either must be taken, it should be reserved for the evening meal.

Whenever it is practicable the skimmed milk and buttermilk to be used should be previously heated with one teaspoonful of flour and half an ounce of mutton fat per pint, and to the buttermilk should also be added a little allspice, and thus render them in nutritive value nearly equal to new milk.

As it is impossible to calculate the cost of each article in each meal correctly with reference to the value of our coins, Dr. Smith calculated the cost of each for eight meals, so as to enable him the better to divide the cost of the pound.

The cost of the breakfast should be $1\frac{1}{4}$ d. to $1\frac{1}{2}$ d. ; of the dinner $1\frac{1}{2}$ d. to 2d. ; and of the tea 1d.

In tables which he appends as a Supplement to his Report he gives details for suitable dietaries at these and slightly different prices.

As a general guide, it may be stated that in very low-priced dietaries bread must form almost the sole source of nutriment, since it is the only food which can furnish the required quantity of nutriment at the limited cost, with the daily constancy permitted by the appetite. The best addition of the same kind is oatmeal. The cheapest kind of fat is that of bacon, and next, that of dripping. The cheapest source of nitrogen, in a food which may be eaten constantly, is buttermilk, and next, skimmed milk. The cheapest solid animal food is fish, as herring, but it cannot be eaten with advantage continually. The most economical sweet is treacle ; and as a continuous supply of fresh vegetables, potato is the best. In the dietaries Dr. Smith usually allows 2d. weekly for fresh vegetables, and where the weekly cost of food exceeds 2s., this may be allowed. This will purchase $3\frac{1}{4}$ lbs. of potatoes weekly, or 2 lbs. of potatoes and 1 lb. of onions, or 2 lbs. of potatoes and 2 lbs. of carrots, any of which, probably, offer a sufficient supply of fresh vegetable juices. It is also to be desired that cabbage and turnip-tops in their season should

form a part of the dietary, and the latter may often be obtained without cost.

Dr. Smith gives much prominence to bread, oatmeal, milk, bacon, and fresh vegetables, whilst tea and coffee, sugar, and expensive fats, are used sparingly.

"The aim in the selection of food," says Dr. Smith, "has been to provide three meals, each having the customary character. The breakfast will consist of bread and milk, rice milk and bread, milk porridge with bread, oatmeal brose with milk or treacle, or coffee with milk, sugar or treacle, and some kind of fat and bread. Butter-milk will sometimes wholly or partially supplant milk. The dinner will consist of meat, bacon, liver or herring, with vegetables and bread. Sometimes pudding made of oatmeal, rice, or flour, will be added to or supplant the animal food, and occasionally buttermilk is provided as a beverage.

"The evening meal will usually consist of oatmeal and milk porridge with bread, or oatmeal brose with treacle or dripping, or coffee or tea, with sugar, milk, and bread, to which butter, dripping, or treacle is added.

"Hence bread will be eaten with milk porridge or meat, or with the addition of treacle, butter, or dripping; flour will be used in making porridge or pudding; oatmeal in making porridge or brose, and eaten with milk or buttermilk; rice in rice milk or pudding, or eaten dry with treacle, dripping, or meat; peas with bacon or liver; coffee with boiled milk and sugar or treacle; and suet with rice or flour."

Dr. Smith does not enter at length into the third question submitted to him. "It may suffice to state," he says, "that additional dietaries would be especially applicable to persons of large stature, to the sick, and to the aged. The former would demand a larger amount of bread and meat, while the sick and aged would need a larger proportion of the luxuries or comforts of foods. To the latter, therefore, a larger addition of tea, coffee, butter, and perhaps meat might be allowed, and the articles should be of better flavour and quality—as, for example, new milk and fresh butter."

V. Diseases of Live Stock in their Relation to the Public Supplies of Meat and Milk.

Allegations have, during the last few years, been abundantly made, and have with the progress of time become more and more definite, that the flesh of animals slaughtered while in a state of disease, and likewise the milk of diseased animals, are extensively sold for human consumption in the United Kingdom. The substance of these allegations was submitted to the Lords of the Council by Mr. Simon. In 1862 their Lordships ordered an inquiry to be made in this matter, and under their directions Mr. Simon requested Mr. John Gamgee, Principal and Professor in the Edinburgh New Veterinary College, to report on it.

Mr. Gamgee's evidence is, in substance, as follows:—That disease prevails very extensively in the United Kingdom among horned cattle, sheep, and swine; that the diseased state of an animal not only does not commonly lead the owner to withhold it from being

slaughtered for consumption as human food, but on the contrary, in large classes of cases (especially where the disease is of an acute kind); leads him to take immediate measures with a view to this application of the diseased animal; and that consequently a very large proportion (Mr. Gamgee believes as much as a fifth part) of the common meat of the country—beef, veal, mutton, lamb, and pork—comes from animals which are considerably diseased.

The diseases which figure behind the scenes of our dead meat market are of course various. For the purposes of Mr. Simon's report it was necessary, however, to refer to three forms only—viz., first, *contagious fevers*; secondly, the so-called *anthracic and anthracoid diseases*; thirdly, *parasitic diseases*.

Of the *contagious fevers* of stock, two are now widely prevalent in the United Kingdom—namely, the *pleuro-pneumonia* or *lung fever*, which is peculiar to horned cattle, and the *aphthous fever, or foot-and-mouth disease*, which affects indifferently and in common horned cattle, sheep, and swine. A third disease of the same class—the *small-pox* of sheep, perhaps of all murrains the most dreaded in this country, is not known to be now prevailing among our flocks; but, a few months ago, an outbreak of it in Wiltshire excited the greatest alarm; and it is a disease which may at any moment be spreading here. A fourth most important contagious fever of stock—the very fatal *typhoid fever or steppe murrain* of Russian horned cattle, has happily been kept away from us for more than a century, partly by the exertions which are made in Russia to limit the disease to those provinces where it is endemic, partly by the strict precautions which are taken at the eastern frontiers of Prussia and Austria to prevent contagious importations; and while this system continues in operation the steppe-murrain is of little practical interest to us.

Of the so-called *anthracic and anthracoid* diseases of stock—diseases which German pathologists have generalized under the name of *milzbrand*—many prevail to a great extent in the United Kingdom, though for the most part as endemic diseases, localized in particular sections of the country. It is said to be an essential character of these diseases, that the blood of the diseased animal undergoes peculiar—in some respects putrefactive—changes; but commonly the disease involves an occurrence of local infiltrations and effusions of putrescent blood-ingredients or blood; and in many cases there also occur, either primarily or secondarily, gangrenous changes (*erysipelatous* or *carbuncular*) in some superficial solid texture of the body. Diseases of this class are further characterized by the fact that, during their course, the diseased body develops in itself a specific morbid poison which, by inoculation, can be made to spread the disease to other animals, including man. The diseases which Professor Gamgee counts under the present head are as follows:—the *splenic apoplexy* of horned cattle and sheep, the *braxy* of sheep, the *black quarter* of horned cattle and sheep, the *glossanthrax* or *tongue-carbuncle* of (almost exclusively) horned cattle, the forms of *anthrax* which affect the mouth, pharynx, and neck in swine, the *apoplexy* of swine, and their so-called *blue-sickness* or *hog-cholera*, the *parturition fever* of cows, the corresponding heaving-pains of ewes, the *navel-ill* of lambs, and the *red-water* of sheep.

Thirdly, there are the *parasitic* diseases of stock—diseases which consist in the colonization of the living animal's body by lower animal forms, larval or mature, subsisting at its expense. Such are the following diseases ; the so-called “measles,” of the pig, in which disease the *cysticercus cellulosa* (larva of the *solium* tapeworm) is found more or less abundantly diffused through the muscular system, and perhaps in other parts, of the animal ; the analogous disease of horned cattle, due to the larva of the *t. medio-canellata* ; the various, chiefly visceral, diseases of stock which depend on larvæ of the *taenia marginata* and *t. echinococcus* ; the brain disease “gid” or “sturdy,” which is due to a larva, mostly of the *t. cænurus* ; the rot of sheep, due to swarms of adult and oviparous flukeworms (*distoma*) in the liver ; the lung disease, which, especially in calves and lambs, is produced by different species of *strongylus* ; the easily overlooked, but highly important disease of swine, which consists in an infection of their muscular system by the minute forms of the *trichina*.

“It is for obvious reasons impossible,” Mr. Simon writes, “in the present state of knowledge, to state in detail what income of morbid product flows from each of the above-mentioned sources into the markets which supply us with food. But from Mr. Gamgee’s report, together with such other information as he has given me, I gather that, so far as he can learn, the truth is about as follows :—That horned cattle affected with pleuro-pneumonia are, much oftener than not, slaughtered on account of the disease, and when slaughtered, are commonly (except their lungs) eaten ; and this even though the lung-disease have made such progress as notably to taint the carcass ; that animals affected with foot and mouth disease are not often slaughtered on account of it, but, if slaughtered, are uniformly eaten ; that animals affected with anthraeic and anthracoid diseases, especially swine and horned cattle thus affected, are (except their gangrenous parts) very extensively eaten ; that the presence of parasites in the flesh of an animal never influences the owner against selling it for food ; that carcases, too obviously ill-conditioned for exposure in the butcher’s shop, are abundantly sent to the sausage-makers, or sometimes pickled and dried ; that specially diseased organs will often, perhaps commonly, be thrown aside ; but that some sausage-makers will utilize even the most diseased organs which can be furnished them ; that the principal alternative, on a large scale, to the above-described human consumption of diseased carcases is, that in connexion with some slaughtering establishments, swine (destined themselves presently to become human food) are habitually fed on the offal and seavage of the shambles, and devour, often raw, and with other abominable filth, such diseased organs as are below the sausage-makers’ standard of usefulness.

“This, in general terms, is Mr. Gamgee’s report on the subject. Disgusting as are the reflections which it suggests, there is not in it, I think, anything intrinsically improbable. For obviously wherever there is dangerous disease among stock, the owner’s commercial instinct will be to make whatever salvage he can, and while he must well know that selling dead stock for meat pays better than

selling it for manure, the public has no sufficient safeguard against his yielding unreservedly to that motive. And if, while the stock is suffering with even the most loathsome of diseases, he thinks fit to have each animal as it sickens, or even as it gets moribund, slaughtered and dressed for the market, assuredly there will often not be any effectual obstacle to his carrying that wish into effect.

" One doubt, however, may well be raised on the subject. A first popular impression would be, that, if things are as described, pestilences must be bearing witness to the fact. Is it possible—it may be asked—that cattle, having all the foulness of fever in their blood, or having local sores and infiltrations that yield one of the deadliest of inoculable morbid poisons, or having their flesh thronged with larval parasites—is it possible that such cattle can be converted into human food, and yet not only the immediate scandal of a general poisoning be escaped, but even something not unlike general impunity be the result? Though the affirmative answer to this question may at first sight seem strange, nevertheless it is, with some qualifications, the true one. And doubtless the impunity, such as it is—but it perhaps is far less general than it appears—results from the operation of well-known chemical and physiological laws. Our animal food before we take it has for the most part been exposed to so high a temperature that any parasites which had their home in it are killed, and that whatever albuminous morbid contagium it contained has been coagulated and made inert. Probably, too, against small quantities of animal poison—and against such as communicate small-pox and glanders, just as against the venom of the cobra and rattlesnake—the stomach has resources of its own; for any such organic product entering the stomach is at once (as regards that mobile chemical constitution on which its efficiency depends) exposed to the strong disinfectant chemistry of digestion, and thus, within narrow limits of quantity, is likely to be rendered inert before it can soak into living texture. Both these influences may count for something, and the first-mentioned of them for almost everything, in explaining the fact (so far as it is a fact) that many sorts of diseased meat are eaten with impunity. On the other hand it must be remembered, that, in this theoretical explanation, the two protective influences do not cover the whole field of danger: for, in the first place, not all meat that is eaten is exposed throughout (nor in every instance even at all exposed) to a temperature sufficient to kill parasites and coagulate albumen; in the second place, even complete coagulation of albumen may, for aught which we know to the contrary, leave some morbid poisons in operation; in the third place, it may very well be that, even where cooking can divest a meat of some original specific infectiveness, the meat may still not be susceptible of quite the same digestive changes as healthy meat, when eaten, undergoes. And thus the theoretical apprehension would be that, with our alleged large consumption of variously-diseased meat, the impunity of consumers, though it were the rule, might be subject to considerable exceptions. Accurate empirical knowledge in this matter is hitherto only beginning to be gathered, and will not yet

warrant any general dogmatic statements as to the effects of diseased meat on human consumers.

With regard to that minor branch of the inquiry which relates to the MILK of diseased animals, Mr. Simon states :—" It appears that, in this country, the most important question is as to the wholesomeness of milk from *animals with aphtha*. Mr. Gamgee points out that on some occasions when aphtha has been prevailing among the cattle of a country, the human population in the same places has suffered from the same or from some similar disorder. And experiment seems to have established as certain, that at least under some circumstances, the human affection may be caused by the consumption of milk drawn from a diseased animal. It may be that the frequency of such communications of the disease, as compared with the number of persons who (more or less) are consumers of milk, is not great. But the danger is one of which the public ought to be aware. Further inquiry is wanted to ascertain whether the allegation, which has been made and contradicted, be true or untrue—that the milk of aphthous cows, if used for food (especially by young children, who are likely to be the largest consumers of it,) is apt to produce disturbance of the stomach and bowels."

Army Medical Department: Statistical, Sanitary, and Medical Reports for the Year 1861.

(*Blue-Book. 1863.*)

The first section of this important Blue-book includes the Statistics of Health and Diseases in the Army prepared under the superintendence of Deputy Inspector-General Dr. Balfour, F.R.S., head of the Statistical Branch. This formidable mass of figures, dressed into all the various shapes which statisticians love, is for civilians rather hard of digestion; but it naturally claims the first attention, since these figures are the crucial tests of the work done, and serve to prove success, denounce failure, and declare want. The ratio of deaths per 1000 of mean strength in the home troops in 1861 was 9·24, being a slight improvement on that of the previous year (9·95), and a most important one indeed on that which had prevailed prior to the adoption of the measures recommended by the Sanitary Commission of 1858, when the ratio of mortality was estimated at 17·5. Analysis of the admissions and deaths shows the reduction to have been chiefly in the classes of miasmatic and venereal diseases; but, as the reporter sets forth, the leading facts of the great prevalence of venereal and high mortality by tubercular diseases remain unchanged. More than one-third of all the admissions were due to venereal, and about one-third of all the deaths to tubercular disease. Let us for a while fix our attention on these prominent features.

The admissions into hospital in the home army of 91,000 men, for venereal diseases, during the year, amounted to about 32,000; upwards of 2200 have been constantly in hospital, and the average duration of the cases has been 24·19 days. The inefficiency caused

by it has been equal to the loss of the services of every soldier at home for 8·56 days, or the loss of the services of a body of 1000 men for two years.

Turning now to tubercular disease, we find it causing 283 deaths out of a total of 822 from all causes, and swelling the per-cent-age of the invaliding lists to a proportionate extent. Dr. Balfour, the author of the Statistical Return, confines himself to marshalling the facts and figures, drawing only arithmetical deductions from them; and the tables are varied so skilfully and accurately as to enable any one at all accustomed to figures to draw out any series of facts into a given order, although nearly every form of important deduction is already there satisfactorily made. Dr. Balfour certainly foresaw that pathologists and physicians, in reviewing these statistical labours, must ask themselves whether these two leading facts are not something more than merely isolated circumstances demanding independent consideration, for the researches of our modern pathology tend more and more to determine the signs by which the effects of syphilis may be recognised in the causation of structural disease of internal organs.

The question which these figures suggest is the solution of the doubt whether the large amount of pulmonary disease in the army is not the direct effect of the great extent of syphilitic infection. This question is one of vast importance in civil as well as in military life. The labours of Virchow in Germany, and of Dr. Wilks in this country, together with those of many other able workers, have especially served to advance our knowledge of this subject. But it is in the army that the greatest facilities exist for the solution of this important medical question; for there the patients, instead of forming part of an ever-shifting population, remain for years under the observation of the same medical officer, who watches the first beginnings of syphilis, observes the ravages of subsequent pulmonary disease, and is by the post-mortem examination able to ascertain the precise structural conditions after death. In our hospitals, the division of practice into "pure surgery," which takes to itself the venereal disease, and "pure medicine," which absorbs pulmonary disease, opposes this continuous observation, even where the changing habits of a civil population do not render it impossible. Turning to the report of Deputy Inspector-General Dr. Mapleton, head of the Medical Branch, we find with satisfaction that this important topic is about seriously to engage the attention of the Department. Dr. Aitken, the Professor of Pathology in the Army Medical School, Netley, contributes an admirable paper on Pulmonary Lesions associated with Syphilis. Although buried in a report of which the circulation has hitherto been by no means commensurate with its value, this paper is certainly destined to influence considerably the advance of our pathology in respect to constitutional syphilis, for army surgeons will find in it all necessary indications for pursuing this subject, and foreshadowings of the promise which such labours hold out. Dr. Aitken observes:—

"Foremost amongst the evils engendered by syphilis is the *deterioration* of the constitution. A condition of ill-health or cachexia is

undoubtedly established ; and the development of lesions essentially specific are brought about in many of the internal organs. There is perhaps no morbid poison—the paludal or malarious poison not excepted—which has so extensive a range of influence as the syphilitic poison. Hardly any organ is exempt from its destructive ravages ; for its virus seems to exert its power chiefly on the connective tissue, and that tissue takes a part in the structure of every organ of the body.

"The medical periodicals for several years past, as well as several monographs on the subject, and the records of the Pathological Society of London, have been mainly instrumental in demonstrating the very remote effects which syphilis exercises upon the organs and the constitution of man. Great advances have thus been made in the pathology of syphilis—advances which are due to clinical, experimental, and post-mortem observations. It has now been clearly shown that many doubtful cases of ill-health are in reality due to the influence of the specific poison of syphilis, the morbid effects of which may not be fully developed till many months, and even years, after the primary infection."

He points out that the more remote effects of syphilis, as to which further definite information is to be desired, are, (1) the specific condition of constitutional ill-health associated with (2) the definite structural injuries, and especially those new growths of connective tissue known as nodes, or gummatous tumours. Surgeons have long been cognizant of such gummatous growths or nodes of the periosteal investment of the bones, especially of the shin, skull, and clavicle, as amongst the commonest features of secondary syphilis ; it is now known that they are developed in the lung, liver, brain, heart, voluntary muscles, testicles, and in the eyes. Dr. Aitken discusses with practised skill the tests by which such growths are recognised ; and while noting that the post-mortem examinations at the invaliding hospital of the army are extremely rich in syphilitic lesions, notes also that, "whatever explanation may be given of the fact, it is undoubted that a very large proportion of the cases dissected acknowledge in the history of their illness or ill-health that syphilis was the starting point." Dr. David Milroy, assistant-surgeon 30th Regiment, gives also an important paper on pulmonary diseases and their relation to syphilis ; and they both furnish notes of cases which clinically support the views expressed. Eminent civilians, such as Graves, Stokes, Walshe, and Virchow, amongst physicians, and Ricord and Acton amongst venereal practitioners, have urgently directed attention to this subject : nevertheless, it has not yet attracted that attention which it deserves ; and in the recent able medical report from the physicians of the Consumption Hospital, on the last ten years of their experience, we do not find any reference to the subject. No doubt their experience will be found proportionately less ample, when they turn their attention to this point, than that of army medical officers, who in a limited number of autopsies, after death from pulmonary disease, find a large proportion of cases presenting syphilitic lesion of the lung. But, on the other hand, these lesions are not of themselves

easily to be recognised, unless the mind of the observer be on the alert. We do not remember to have seen anywhere a more clear and rational account than that which Dr. Aitken gives in his paper; and believing that such description will possess great interest for all our readers, we think it right to quote his account of the character of syphilitic alteration of the internal tissues:—

"The lesions just noticed eventually assume a great variety of anatomical forms; but in the first instance they are to be recognised in the typical form of *nodes*, or *gummatus nodules*. The minute structure of these gummatus nodules has been closely examined by many observers. This gummatus nodule consists of a growth of elements which leads to the development of an elastic tumour composed of well-defined tissue, and the elements of which are extremely minute. The tumour takes origin from the connective tissue or the analogues of such; and hence the universality of the site of syphilitic lesions. When they are sufficiently large to attract attention—as in the form of a node on the shin-bone, or on some part of the true skin—they are small, solid, pale knots, like a hard kernel, about the size of a pea. They are generally first seen on some part of the true skin or subcutaneous or submucous tissue; and when the tissue in which they happen to grow is sufficiently lax, they grow to a considerable size, and convey to the touch a sensation as if they were filled with gum. Repeated examinations of this growth show that in its gelatinous or soft state it arises from a proliferation of nuclei amongst the elements of the connective tissue, not unlike the formation of granulations in a wound. The component cell elements appear as round, oval, or oat-shaped particles imbedded in a matrix of fine connective tissue of a granular character, and tending to fibrillation. The cell elements are a little larger than blood-globules, and are distinctly granular in their interior when mature. In the growing part of the node, and immediately in its vicinity where growth is abnormally active, the minute cell elements are seen to be developed in groups within the elongated and enlarged corpuscles of the connective tissue. In form, therefore, the node or gummatus nodule resembles a tubercle, and, by fatty degeneration or tuberculization, may not be capable eventually of being distinguished from tubercular deposit. How, then, are we to recognise the specific nature of such gummatus nodules? There is nothing in them so specifically and anatomically distinct that, apart from their history, they can be recognised. The history of the syphilitic case during life is the great guide. The nodes on the shin-bone or clavicles have long been recognised as the product of syphilis. It may almost be said that they have been seen to grow under the eyes of the patient and the observer; and their anatomical characters are found to be such as compose the gummatus nodules just described. In a case of inveterate syphilis, therefore, whose history is fully known, in whom the node on the shin is characteristic and has been seen to grow, and in whom also we find similar nodules in the lungs or in the liver and in the testicles—symmetrically growing in these latter organs—and consisting of minute cell elements exactly the same as the node on the shin, it is impossible to overlook the fact, or not be

impressed with the belief, that all these lesions acknowledge one and the same cause of development—namely, the syphilitic poison—of which they are the expression. The progress of the node is also characteristic and suggestive. Growths of a similar form which result from idiopathic inflammation generally proceed to the formation of an abscess or to the hypertrophy of fibrous tissue. Abscesses are recognised by their pus; fibrous tumours or hypertrophies by the fibre elements which compose them.

"Growths of a form similar to the node which result from cancer are in general to be recognised by the juice expressed from them. In the gummatous nodule we have no juice; and the cell elements seen in cancer are generally so diversified in their form and mode of growth as not to be easily mistaken. The gummatous nodule is uniform as to the size and form of its cell elements, and forms growths less highly supplied with bloodvessels than cancers. Cancers also tend to infiltrate and involve neighbouring textures; the gummatous nodule remains isolated and distinct.

"By way of elimination, therefore, and by duly observing the history of the case, we are generally able to recognise the nature of such growths, and to assign to them their proper place in pathology."

*Report of the Royal Commission on the Sanitary State of
the Indian Army.*

(Blue-Book. 1863.)

In 1859, a Royal Commission was appointed to inquire into the sanitary state of the Indian Army. This Commission, a natural sequence of the great Commission of 1857 on the health of the British Army at home and in the colonies, and, like the latter Commission, chiefly brought about by the energy of the late Lord Herbert of Lea, terminated its investigations, in May of the present year. The results of these investigations are commensurate in importance with the unusual and prolonged labour which the Commission devoted to its weighty task.

The data from which a correct notion has to be derived of the sanitary condition of the European soldier in India are, in several important respects, defective. One of the first and most weighty consequences of the present inquiry must be the accurate registration, on a systematic plan for all the three presidencies, of the facts most intimately connected with the health-status of the soldier. This want has been in part anticipated by the extension of the scheme of vital statistics adopted by the Army Medical Department to Indian stations. Meanwhile, the data which have been reduced and subjected to discussion by the Commission disclose an almost incredible waste of life. During the present century the annual rate of mortality amongst the East India Company's European troops amounted to no less than 69 per 1000. In the healthy parts of England and Wales, 8 out of every 1000 men of the soldier's age die annually; in the unhealthiest parts of England, and among the

unhealthiest trades, the mortality is at the rate of 12 in 1000. Thus, taking the English standard, besides deaths from natural causes, 60 head per 1000 of our troops perish in India annually. At twenty years of age the mean after-lifetime is diminished, as compared with England, nearly 22 years.

But a remarkable difference is observed in the rate of mortality among different classes of the European population of India. The annual death-rate among officers in India has been hitherto 38 per 1000—little more than half that of the non-commissioned officers and men. Again, among the civil service the death-rate does not range higher than 20 per 1000—a rate which approximates to the highest average mortality occurring among the native troops. An equally great difference it is to be presumed, if the data admitted of a just comparison, would be observed between the constant-sickness rates of the various services, European and native. In Bengal the average constant-sickness rate among the European troops is 84 per 1000. "With this amount of sickness, an army of 70,000 British in India has, so to speak, a vast hospital of 5880 beds constantly full of sick, and loses yearly by death 4830 men, or nearly five regiments."

Officers, civil servants, and native troops are alike exposed to the same climatic and local conditions as the European rank and file: whence, then, arises the vast disproportion between the waste of life among the different services and classes of the European population? The diseases most inimical to life are the same in each case—to wit, fevers, dysenteries, diseases of the liver, and epidemic cholera. Three-fourths of the mortality among European troops serving in the presidency of Bombay between 1830 and 1846 was, according to Sir Ranald Martin, due to these endemic diseases. The most influential and persistently active cause of disease is also the same in each service and class of population. Writing of British troops, the great authority just referred to says that, "taking any one cause, he would say that the union of heat, moisture, and malaria constitutes the most powerful one in destroying the integrity of the European soldier's health, and conducting to his fall by disease."

To learn the sources of the extraordinary proclivity of the European soldier to disease in India, and its fatal effects upon him, it is requisite to trace his history from the time of leaving these shores. Too commonly he is sent away unformed; and, until very recently, on his way out, he was apt to acquire—thanks to a liberal spiritration—a taste for ardent spirits, or, if the taste had been already acquired, to have it fostered. If there be one evil habit among soldiers in India having a pre-eminence of mischievousness, it is dram-drinking. Military and medical officers alike condemn the practice. The Commission give a prominence to the questions arising out of it commensurate with their importance. "The great disease with officers and men," said Sir Charles Napier, "is drink. . . . Why, their ration is *two drams* a day, and *eight* of these drams make a *quart bottle*! So the sober soldier swallows *one-fourth of a bottle* of raw spirits every day!" To tempt the soldier from the canteen, efforts have been largely made by commanding-officers to provide

athletic and other means of amusement. But the establishment of these means, as well as of other benefits, is dependent upon a tax levied upon the spirits sold to the soldier ! "There is, as it were," says the Commission, "a tacit encouragement for the soldier to drink that which is admitted to be injurious to health, in order that he may be benefited in other ways which may be conducive to health." On landing in India, the soldier, if unformed, is subjected to a course of drill most trying to the physical powers and detrimental to health under the intense heat; if formed, he has before him a life of weary and over-fed idleness. "He rises at gun-fire; attends his parade or drill, over soon after sunrise. He then returns to his barrack, and during the hot season he is not allowed to leave it till late in the afternoon. At one o'clock he consumes a large amount of both animal food and vegetables, porter (perhaps a quart), and spirits. He has few or no means of occupying himself rationally. He lies on his bed and perhaps sleeps most of the day. He has his evening parade or drill: and his turn of guard duty once every five, seven, or ten days. Even at home this kind of regimen would be far from conducive to health. In India, both physically and morally, it helps to destroy it in men in the prime of life, with abundance of nervous power to dispose of." For the rest, he is constantly exposed to miasmatic and malarious influences of a character such as very nearly to exhaust the descriptive powers of the Commission. Every native town, every bazaar contiguous to a cantonment, and every encampment of native troops, is a veritable Malebolge,

"Holding sharp converse with the sight and smell."

Nay, still following Dante, we might go further, and describe the natives as

"A crowd immersed in ordure, that appeared
Draft of the human body."

There is not a station which does not suffer more or less from contiguity with native habitations, and which itself does not suffer from a bad site or grave sanitary defects, or both, and more particularly from an imperfect and probably polluted water supply. But European troops are less exposed to the evils arising from these sources than the native troops, and they are affected by them to a great degree in common with their own officers and the civil service. Again, the much lower degree of mortality among the officers and civil servants shows that climate has little of itself to do with the exaggerated mortality among the soldiers. The source of this is to be further sought in some circumstances peculiar to the soldier's life. There is but one class of the native community which is placed under conditions of aggregation and comparative inaction at all approaching those in which the soldier is found—namely, the prisoners in jails. Now, the mortality among the Indian prisoners approximates to that observed among British soldiers. It is in the very conditions of aggregation and inaction, moreover, that the British soldier differs most widely from his officer, the members of the civil service, and the native troops. It would almost seem as if the barracks of our Indian Army were contrived as condensers of the malarious and

miasmatic influences to which the troops were exposed. In short, the enormous sickness and mortality of the European forces in India may be traced to certain well-understood causes.

The recommendations of the Commission include (1) the diminution of the number of stations in the plains, and the removal of as large a proportion of troops to the hills and table lands as would be consistent with the security of the country; (2) the organization of an efficient sanitary service; and (3) suggestions for the removal of the particular hygienic evils disclosed by the inquiry.

The results of the Commission's inquiry into the important subject of hill-stations are stated as follows:—

1. "To reduce to a minimum the strategic points on the alluvial plains, and to hold in force as few unhealthy stations as possible.

2. "To locate a third part of the force required to hold these points on the nearest convenient hill-station or elevated plain, including in this third, by preference, men whose constitutions are becoming enfeebled, and recruits on their first arrival; and to give the other two-thirds their turn.

3. "Never to trust to simple elevation as a means of protecting health; but while occupying the best available elevated stations, to place these (for they want it just as much as the stations in the plains) in the very best sanitary condition."

The diminution of the number of stations in the plains and establishment of one-third or more of the forces in the hills, although the recommendation best fitted to effect the most thorough and permanent amelioration of the sanitary condition of the Indian Army, is that probably which will be least readily carried into operation. Involving a radical change in the distribution of the European troops in Hindostan, it may be anticipated that the necessity for so important a step will not be immediately perceived by the military authorities, and that time will be required in order that they may familiarize themselves with, and for the growth of a just estimate of, the conception.

The organization of a special sanitary service, the second of the two principal recommendations of the Commission, must follow as a necessary consequence of the inquiry, if this is to give rise to any permanent practical results. To the absence of such a service may be traced the whole of those great evils which have been laid bare by the investigation. It might have seemed a self-evident truth that the measures requisite for the preservation of the health and vigour of the soldier demanded as scrupulous and systematic organization as those necessary for his care when sick, or for his training in arms; but this truth has never been learnt by governments or military authorities, unless as the result of bitter or even disastrous experience.

"There are, no doubt, considerable difficulties," says the Commission, "in the way of organizing an efficient sanitary service for India, and in adapting it to the various exigencies of the country; but there are, nevertheless, certain leading principles which should be kept in view in any administrative arrangements to be introduced for the purpose. It is, for example, of great importance that the

procedure should be as far as possible uniform in each presidency ; and this could be best secured by appointing commissions of health, one at each seat of government, representing the various elements—civil, military, engineering, sanitary, and medical, on the co-operation of which depends the solution of many health questions. We are of opinion that such commissions are necessary also to give a practical direction to sanitary improvements and works. Their functions would be chiefly consultative and advising on all questions relating to the selection and laying out of stations, proper construction of barracks, hospitals, and other buildings, drainage, water supply, cleansing, and general sanitary supervision in stations, cities, and towns, and on the prevention of epidemic diseases. To fulfil the other object of taking advantage of home experience, it would be necessary to afford these commissions every needful information on the most approved and economical methods of laying out sanitary works, and in those healthy principles of construction and improvement of barracks and hospitals which have been successfully carried out in England, but which have still to be introduced into India, and adapted to the circumstances of the country. The sanitary improvements which have been recently introduced at home military stations, and which are about to be carried into effect at certain foreign stations by the War Office, as well as the improved principles of construction in barracks and hospitals now in use, were adopted on the advice of a commission specially appointed by the War Office to inquire into the subject. The questions which arise out of the evidence from the Indian stations are of the same nature as those which have come under the examination of, and have been dealt with by, the War Office Commission ; and it would be highly advisable to make their experience available for India by adding to the existing Commission an engineer and a medical officer conversant with Indian sanitary questions, or to form a similar commission in England for this object. Such a commission, if considered preferable, should include members specially conversant with recent improvement, military and civil, an engineer of Indian experience who has given attention to sanitary works, and a medical member acquainted with the sanitary question as it presents itself in India. The function of such a commission could, of course, be consulted only. It would simply be the medium of advising and informing the Indian Government and the presidency commissions on the latest improvements, and on the best principles of sanitary construction. For this purpose it might give its advice on the healthiness or otherwise of plans, and as to the sanitary details of buildings to be occupied by troops ; on the best and most economical methods of water supply and drainage : it might collect and publish useful information and instructive matter regarding improvements, and it might possibly be able to give a more practical direction to the education of cadets of engineers destined for service in India, to enable them to devise works and improvements on healthy principles. It would in no way interfere with perfect freedom of action. It would place at the disposal of the Indian Government and presidency commissions the latest experience, classify and generalize

the results of their several publications in a summary form, and thus enable all to arrive at a more satisfactory decision as regards measures to be carried out for protecting the health of troops than would otherwise be possible."

1. *A New Method of Treating Disease by Controlling the Circulation of the Blood in Different Parts of the Body.*

By JOHN CHAPMAN, M.D., M.R.C.P.

(*Medical Times and Gazette*, July 10, 1863.)

2. *An Experimental Inquiry into the Effect of the Application of Ice to the Back of the Neck on the Retinal Circulation.*

By DR. J. HUGHLINGS JACKSON, M.D., M.R.C.P., Assistant Physician to the National Hospital for the Paralysed and Epileptic.

(*Medical Times and Gazette*, July 28, 1863.)

By means of cold and heat applied to different parts of the back, Dr. Chapman holds that the supply of blood to any part of the body may be diminished or increased at pleasure, and that in this way we are put in possession of a new curative system which will give us the mastery in a large number of diseases. He believes that this controlling power over the circulation is exercised through the instrumentality of the vaso-motor system of nerves, the supply of blood being diminished when increased action in these nerves produces a state of contraction in the vessels, the supply of blood being increased when paralysis of these nerves allows the vessels to become relaxed. The idea (which may have been suggested by Dr. Brown-Séquard's practice of applying cold and heat as a mode of treatment in various affections of the nervous system) is, in its author's opinion, in strict accordance with the discoveries respecting the vaso-motor functions of the sympathetic nerve which have made the names of Professor Claude Bernard and Dr. Brown-Séquard famous among physiologists.

"In order to lessen the excito-motor power of the spinal cord only," writes Dr. Chapman, "I apply ice in an india-rubber bag about two inches wide along that part of the spinal column containing the part of the cord on which I wish to act. On the same principle, the vitality of the spinal cord may be increased by applying hot water and ice alternately, each in an india-rubber bag, if very energetic action be required; if less vigorous action be necessary, I apply ice, or iced water only, using it several times a day, for a short time on each occasion, with a long interval between each application.

"If it be desirable to increase the circulation in any given part of the body, this I have found myself able to effect by exerting a soothing, sedative, depressing, or paralysing influence (according to the amount of power required) over those ganglia of the sym-

thetic which send vaso-motor nerves to the part intended to be acted on. This influence may be exerted by applying ice to the central part of the back, over a width of from four to four and a half inches, and extending longitudinally over the particular segments of the sympathetic and of the spinal cord on which it is desired to act.

"For example, intending to direct a fuller and more equable flow of blood to the brain, I apply ice to the back of the neck and between the scapulae; increased circulation in and warmth of the upper extremities are induced in the same way; the thoracic and abdominal viscera can be influenced in like manner by applications to the dorsal and lumbar regions; while the legs and the coldest feet ever felt can have their circulation so increased that they become thoroughly warm by an ice-bag applied to the lower part of the back.

"The bags I use are of different lengths: of the width already named for adults, and of lesser widths, of course, for children. I have had them made both of india-rubber and of linen with a surface of india-rubber upon it: the former are the best. The width of the bags is equal throughout, except at the opening, which is narrowed to facilitate tying, and elastic to admit easily the lumps of ice. When the bag is full, I divide it, if a long one, into three segments: this can be done by constricting it forcibly with string; the ice of the upper part is thus prevented from descending, as the melting goes on, into the lower part of the bag. I am preparing a bag on a new principle, which will be a great improvement on those I now use; but as it is not yet complete, I abstain from describing it here. I sustain the bag in the position intended by means of ribbon or tape passed through loops at the back of it, then over the shoulders, and round the body."

Dr. Chapman is very sanguine.

"Theoretically," he writes, "I feel assured that by the methods I have described physicians will be able to control the great majority of diseases; experimentally, I have already received numerous and wonderful proofs that this assurance is well founded. By thus acting, by means of cold or heat, or both alternately or combined, on the spinal cord and ganglia of the sympathetic, I have succeeded in completely arresting the fits of many epileptics, and in curing the following maladies:—Paralysis; long-continued and extreme headaches; prolonged giddiness; extreme somnolence; a feeling of want of firmness in standing and of security in walking; habitual hallucinations; loss of memory; weakness and dimness of sight; ocular spectra; inequality of the pupils; lateral anaesthesia; incontrollable spasmodic opening and shutting of the mouth; cramps of the limbs (in two cases of the hands, incapacitating the patients to continue their work); numbness of the fingers, incapacitating the patient to pick up small objects, or to use a needle; paralytic of the bladder: incapacity to retain the urine more than a few minutes (two cases recovered to a surprising extent); profuse and too-frequent menstruation; scanty and irregular menstruation; extreme menstrual pains; profuse leucorrhœa, with long-continued bearing down of the womb, and extreme pain of the back; habitual constipation;

habitual diarrhoea; general coldness of the surface of the body which has continued for many years; habitually and hitherto irremediably cold feet."

Judging from what we have seen of the results of this mode of treatment, our opinion would be expressed in very different words to those of its author. Whether further evidence will lead us to alter this opinion remains to be seen. We shall certainly remain open to conviction; and in the meantime all we will do is to quote the following clever and important remarks by Dr. Hughlings Jackson, and leave them to speak for themselves, without further comment:—

"At the Hospital for the Epileptic and Paralysed I tried the following experiments in order to see if I could influence the eye—the size of the pupil, the calibre of the retinal arteries, and coloration of the optic disc—by applying cold to the back of the neck. It occurred to me to do so on reading Dr. Chapman's paper on 'A New Method of Treating Disease by Controlling the Circulation of the Blood in Different Parts of the Body.' The patient on whom I tried it was a girl of fair general health, but who was subject to sudden startings of the whole body, for which she had been admitted. When ice was applied to the back of the neck and upper part of the dorsal spine, I could detect no alteration whatever in the size of the pupil. I confined my attention to one. It varied readily in light and shade. (I tried this experiment on another little girl several times with the same result.) I then examined the fundus with the ophthalmoscope, noting carefully the size of all the vessels, and the degree of coloration of the optic disc. The nurse then applied the ice to the back at the lower cervical and upper dorsal regions, but there was no change whatever; the vessels remained of the same size and the disc of the same colour. I next examined when the ice was applied to the back of the head, and then to the side of the neck, and I tried the same experiments on a second patient; in both with the same results.

"Now, the pupil not being artificially dilated, it was of course not very easy to estimate the size of the vessels and the coloration of the disc. Yet I had it well and steadily under view when the ice was applied, and when it was taken away. I, however, dilated one pupil with atropine, and then saw the disc as plainly almost as the child's face. Had it, to use such expressions, blushed or paled, it would have been readily detected. I looked both before, during, and after the application of the ice. The large vessels did not alter in the least, nor did a small artery, like a hair, that I watched with great care, and, what is of more importance, I did not detect the least change in the colour of the optic disc. The ice was applied to the back of the neck for exactly nineteen minutes. I was very careful to keep the disc steadily under view the moment the ice was suddenly applied and when it was suddenly taken off, and indeed I kept the disc under a steady gaze nearly the whole of the nineteen minutes. Finding no difference on taking away the ice after this long application, it was re-applied almost directly, and then, the disc being under view, the nurse took the ice away, and immediately

substituted a flannel wrung out of very hot water. I could find no change.

"I used the ordinary ophthalmoscope in the above examinations.

"Next morning I examined the retina again, and this time by the direct method. The disc seemed of course of large size, and I had no difficulty in keeping it under view at the moment of suddenly 'making contact' and of suddenly 'breaking contact.' I found no change in the size of the arteries or veins, nor in the coloration of the disc.

"So far, then, I could *see* no change in the circulation, no change of colour in the disc; but I freely admit that very likely with the greatest care I might be unable to detect some little alteration of colour. Nor would any one I suppose who adopts Dr. Chapman's views believe that the changes would be very marked, so as to be easily appreciated by the eye. Still these observations may be of some value, if confirmed, in settling that point by experiment—viz., that there is no perceptible alteration.

"I tried then to get information from patients in the Hospital who were using the ice for purposes of treatment as to any alteration in the function of the eyes. [The ice is applied for half an hour, and then hot flannels for half an hour, the patient sitting in a chair so that there could be no defect from position.] One little girl complained that several times a day her sight was 'queer,' but this is a common complaint in epileptics, and this patient's sight did not fail when the ice was applied. Two other patients were not intelligent enough to give me any answers at all. In a fourth the answers were unsatisfactory. I asked the patient what she felt, and she described the local sensation, and spoke of a pain over the right eye, and, in reply to several questions, said there was no other feeling. But, on asking the leading question, 'Is there anything wrong with your sight when the ice is applied?' she said there was a little dimness.

"Of course the next thing was to apply the ice to myself, and see if it affected my own sight, but I have not had time, and this has been the case with a medical friend who kindly offered to submit himself to the experiment. I have, however, been informed by the Matron of the Hospital, who, at my request, tried the experiment on herself, that it produced for a time dimness of vision, which was followed by greater clearness. I shall proceed to make further experiments on intelligent patients, in order to get a wider basis of evidence than can be supplied by one case.

"My object in making these experiments was not so much for the sake of learning the effect of this treatment on the circulation in the eye, as to be able to form some idea of its effect on the cerebral circulation. Dr. Chapman, in the communication referred to, writes (page 60): 'For example, intending to direct a fuller and more equable flow of blood to the brain, I apply ice to the back of the neck and between the scapulae.' If the circulation in the brain were affected by the application of ice to the back of the neck, it is, I think, probable that the branches of the arteria centralis retinæ would be affected too."

Practical Hints on the Treatment of Nervous Pain and Neuralgia.

By C. B. RADCLIFFE, M.D., Physician to the Westminster Hospital, and to the National Hospital for the Paralysed and Epileptic.

(*British Medical Journal*, Nov. 7, 1863.)

In a paper read at the last annual meeting of the British Medical Association, at Bristol, Dr. Radcliffe said :—

" In the remarks I have to make, I do not propose to suggest a particular plan as applicable to the treatment of all kinds of pain. I propose merely to speak of the kinds of pain which are known as nervous pain and neuralgia, and which are sufficiently well known to need no formal definition ; and upon this small part of a wide subject I do not propose to do more than read the rough notes of three or four cases, with a few paragraphs of preliminary observations. And in doing this, I feel no little hesitation, Mr. President, in speaking before you upon a subject which you yourself have elucidated, in one of its most important bearings, in so satisfactory a manner.

" The outline of the plan of treatment which I have to propose is this :—to take care that the diet does not contain too much lean meat and too little fatty and oily matter ; to look upon the properly regulated use of alcoholic drinks as essential to success in treatment ; to avoid tea altogether ; to be very chary in the use of sugar ; to give some preparations of phosphorus, with or without cod-liver oil, as nutrients for a starved nerve-tissue ; to avoid the habitual employment of aperients ; and, as a rule, to eschew the use of sedatives in sedative doses. This plan is, indeed, that which I have carried out for four or five years in many cases in which the primary indication of treatment was to remedy an asthenic condition of the nervous system—various convulsive maladies, many forms of paralysis, and so on.

" In the few minutes at my disposal, it is impossible for me to do more than hint in the most cursory manner at the reasons which have dictated this plan.

" I have used fatty and oily articles of food, and cod-liver oil, on the supposition that these substances might be essential to the proper nutrition of nerve-tissue ; for this tissue, in the main, is built up of fatty and oily matter.

" I have used some preparations of phosphorus, with a view to promote the nutrition and functional activity of nerve-tissue ; for phosphorus, like fat, is an important ingredient in this tissue. I have given the phosphorus for the same reason as that which would induce me to give iron in cases where I wanted to favour the nutrition of the red corpuscles of the blood. For the last seven or eight months I have used the hypophosphites as a means of giving phosphorus ; and the results at which I have arrived would seem to show that these salts are quite as effectual as, and much more convenient than, the phosphorated oil of the Prussian *Pharmacopæia*, or the ethereal tincture of the French *Codex*—pre-

parations which I have been using on a somewhat extensive scale for the three or four years previously. I find, indeed, that the hypophosphites are almost as effectual remedies in the treatment of nervous pain and neuralgia, and of various other asthenic conditions of the nervous system, as Dr. J. F. Churchill of Paris would have us believe them to be in the treatment of phthisis; and I think that the science of healing is indebted in no small degree to Dr. Churchill for having brought these salts into the service of medicine.

"I do not take upon myself to explain why an excess of lean meat should do harm in the cases under consideration. I do not profess to know. It may be, in some cases, that it favours a gouty condition of the system—a condition which is at the foundation of many kinds of pain; but, whatever be the explanation, I have no doubt that excess of lean meat does do harm in many cases of nervous pain and neuralgia; and that the common notion, not always confined to non-medical circles, that lean meat is the one nutrient substance, is a mischievous fallacy. In the lectures which I had the honour of delivering before the College of Physicians a few months ago, and which have recently been occupying a place in the pages of the *Lancet*, one great point was to show that pain was the sign of depressed, and not of exalted vitality; and that alcoholic drinks, properly administered, were the natural anodynes. And to these lectures I must refer for my reasons for arriving at these conclusions. Indeed, here I will only say, that experience has taught me to look upon the properly-regulated use of alcoholic drinks as essential to the successful treatment of nervous pain and neuralgia.

"Why tea should be unsuitable as a common beverage, in the cases under consideration, may also be a difficult and complicated problem. I am, however, disposed to think that tea must be hurtful if alcoholic drinks are required, except it be to correct the results of excess in the use of such drinks. Tea—cold tea, for the action of hot water must be separated, if we would know the true action of tea—would seem to be not remotely analogous in its action to digitalis, and therefore only tolerable when there is an active condition of the circulation to subdue—a condition which is not often met with in cases of nervous pain and neuralgia. But, be the reason what it may, I am perfectly satisfied that it is a matter of vital importance to eschew tea as an habitual beverage, if we would fight successfully against nervous pain and neuralgia.

"As to sugar, I am disposed to think that this substance does harm in cases where a rheumatic habit is at the bottom of the trouble; and that it may do harm by favouring the formation of that substance which, upon very good grounds, is believed to have much to do with the production of rheumatic fever—viz., laetic acid. At any rate, I have now seen several cases in which a patient, who had taken a good deal of sugar, was much more free from pain upon taking this substance in moderation.

"Aperients will scarcely ever be wanted, if a sufficient amount of fatty and oily matter be introduced into the diet; and this, I take it, is a very great advantage; for, in my opinion, there is no one practice which so much tends to keep up a habit of nervous

pain and neuralgia as that of using aperients and purgatives habitually.

"With respect to the use of sedatives in sedative doses for the relief of pain, I will only say this, that this practice seems to be cutting the Gordian knot, instead of untying it—a plain confession, in fact, that treatment has failed.

"It is, however, more than time that I bring these prefatory hints to a close, and proceed to the cases of which I have spoken. I read the notes taken at the time; and I leave unread many similar notes, at least tenfold in number."

CASE 1.—Jan. 8th, 1863. Mrs. W., aged 36, the widow of a clergyman, complained of distressing headache, low spirits, and sleeplessness, saying that she had suffered in this manner almost incessantly for the last five years. Trouble connected with the death of her husband was the primary cause—not privation, for her circumstances were tolerably easy.

There was nothing remarkable in her appearance, except that she was very thin. Pulse 86; the hands and feet were habitually cold; there was complete want of appetite; the bowels were exceedingly constipated. For the last two years she had lived almost entirely upon the lean of mutton-chops and strong-beef tea. Butter and fat had been avoided, from a fear that they would cause biliousness; and tea had been taken at least twice a day, because it was liked. Alcoholic drinks had been not entirely abstained from; but a wineglassful of very weak brandy and water would be the maximum quantity allowed during the course of the day. All light and noise had been intolerable for some months past; and her time had been spent chiefly in a darkened room upon a sofa.

She had had no treatment during the last two years, except occasional doses of quinine and eight grains of compound rhubarb pills every other night. She had previously tried arsenic, quinine, valerian, and "everything," without any permanent benefit. Change to the seaside had been the only thing that had done any good.

She was recommended to use weak coffee for breakfast, instead of tea, with an egg or a little fat bacon; a little milk and cream and brandy at 11 A.M.; a light early dinner, with a glass of sherry; a little coffee and bread and butter at 5 P.M.; and an hour before bedtime, a good supper, something like the dinner, with a full glass of Bass's ale or Guinness's stout, in place of sherry. She was also recommended to take as large an amount of oily and fatty matter as she could, and to diminish the amount of lean meat. She was ordered to take ten grains of hypophosphite of soda and a drachm of tincture of hops three times a day.

January 16th.—She was better; had more animation and freshness in the countenance. She slept four hours continuously last night. There was less excitability. The medicine was continued.

Jan. 30th.—There was a great change for the better: she said that she had scarcely had a headache for the last week. Yesterday she had a walk of two miles without bringing on headache—a most unwonted thing with her. The bowels had acted every day for a week without aperients. The medicine was continued.

March 1st.—She looked ten years younger than when I saw her last; slept well; and ate well. The bowels acted without aperients. There had been no headache to speak of since the last visit.

June 2nd.—She brought her daughter to see me. She herself continues quite well.

CASE 2.—Feb. 6th, 1863. Mr. J. W., aged 52, occupied in the Custom

House, very thin and spare, walked with great difficulty by the aid of a stick, and complained of constant sciatica in both legs. He had lumbago three years ago ; and this pain, after troubling him for some weeks, shifted first into one leg and then into the other, and from that time to this had been progressively getting worse. He had rheumatic fever when 25 years of age.

His pulse was 70, and very weak ; the appetite very bad. For a long time, almost all his life, he had lived upon a very dry diet, disliking fat in any form, and taking very little butter. He had been a teetotaler for fifteen years. Three years ago he took hydrochlorate of ammonia for several months, with some benefit. Since this time he had been under homoeopathic treatment, without any benefit. Part of the latter treatment was a permission to take fifteen drops of Battley's sedative solution every night on going to bed.

I put him on the same plan of treatment as that described in the first case, with half an ounce of cod-liver oil twice a day in addition. The sedative at night was discontinued, and some stout ordered to be taken in its place.

Feb. 16.—There was no change for the better ; but, on examination, it appeared that he had yet to begin the treatment recommended at the first visit. He would have it that the fat and oily matters would make him bilious. The treatment was ordered to be continued.

March 2nd.—He was better. For the last week he had slept better than he had done from the commencement of his illness. He found that the oily and fatty matters did not disagree with him, and that his bowels for the last week had acted without medicine. The pain was somewhat relieved, but not so much as could be wished. He told me that he was in the habit, and had been for years, of taking three or four times a day, with his meals, or between his meals, *café noir*, without milk, but with as much sugar as the coffee would dissolve ; and, therefore, I recommended him to leave off sugar as much as possible, and to diminish the amount of coffee. The treatment was continued.

April 16th.—He walked into the room without any apparent stiffness, and without his stick. He had lost the pain in the legs altogether for the last fortnight, and had gained ten pounds in weight during the last month. He was hungry now, and slept very fairly at night. He had never required any aperient medicine since the adoption of this plan of treatment.

CASE 3.—Mrs. T., aged 38, the wife of an artist, was admitted under my care into the Westminster Hospital for tic douloureux in the right side of the face. She was tall and flabby in build, without family, and, as it appeared, had been the subject of much privation and misery for the last four years, during which time she had scarcely been free from the tic. At present, the pain, which was almost incessant, was brought on by any attempt to masticate or swallow ; and she appeared to have very little relief, except when she was stupefied by opium. She confessed to having taken half a teaspoonful of laudanum every night at bedtime for two years, and a "little extra" now and then in the course of the day. Bread and tea appeared to have been the principal articles in her dietary.

She was recommended to have a chop, two eggs, and a pint and a half of stout, the greater part of the pint to be taken at bedtime ; also coffee, in place of tea ; and, for medicine, cod-liver oil in three-drachm doses, and hypophosphite of soda in seven-grain doses three times a day.

March 7th.—She slept four hours in the night continuously.

March 8th.—She had a good night, upon the whole ; and took her breakfast with some appetite. The pain was more tolerable.

March 10th.—Yesterday she found herself able to eat and swallow without bringing on the pain. She asked for more food.

March 20th.—She had been progressively improving since the last report. There was no tic yesterday. The bowels now acted regularly without medicine. She had a long walk yesterday, without bringing on pain.

March 30th.—She was now suffering from severe pain in the face, which was referred to a wetting in the rain yesterday. A hot bath was ordered, and the medicine continued.

April 3rd.—She was well again. The treatment was continued.

April 15th.—She was discharged cured. She had no pain on eating or swallowing; no pain at any time for the last fortnight, or, at any rate, no pain to speak of. She looked stronger and fresher; and was so in fact.

May 6th.—I saw this patient accidentally in the ward. She considered herself well, but had been taking oil and hypophosphite almost regularly ever since her discharge from the hospital.

CASE 4.—March 16th, 1863. M. Adolphe B—, aged 40, a musician, was suffering from severe tic in the right cheek, and had the muscles of this side of the face drawn and contracted to a considerable degree. With few intervals, he had suffered from the pain for three and a half years. The face became contracted on the painful side two years ago. Before the pain began, he had been treated for three months with iodide of potassium for constitutional syphilis. He smoked excessively, and allowed that he had for many years been very intemperate in sexual matters. His dinner consisted chiefly of a beef-steak and a pint of stout, taken at a chop-house. He drank tea in large quantity, taking it cold with his tobacco. He never drank any spirits. He had had nearly all his teeth drawn, in the hope that the pain in the cheek might be referred to the irritation from some diseased tooth.

He was recommended to smoke less, and to try a mild tobacco when he did smoke; to take coffee in place of tea; to eat oily and fatty matters, and less lean meat; and to take three drachms of cod-liver oil and ten grains of hypophosphite of soda three times a day.

March 23rd.—For the last three days he had been almost altogether free from pain; and last night he slept for several hours continuously (he had been recommended to take a glass of stout shortly before going to bed). This—*i.e.*, sleeping satisfactorily—for several years had been unknown to him.

March 30th.—He had had no pain whatever since last visit, and considered himself quite well.

May 19th.—Except an occasional pang, for which he said there had been generally good reason, the tic might be said to be altogether at an end. He had lost altogether the anxious nervous look which he had when I first saw him; and the contracted facial muscles had almost altogether recovered their natural condition.

CASE 5.—M. W—, aged 28, a lady's maid, suffered from almost constant nervous headaches. She had never been quite free from these pains for two years, but lately they had been much worse—so much worse, that she was now compelled to leave a good situation. A great moral shock, arising from the discovery of a fellow-servant dead by her side on waking one morning was referred to as the cause of the pain.

She had had a great deal of medicine; but did not know what kind of medicines were given, except that they were generally intended to act on the bowels, and to promote menstruation, which was always very scanty and painful, and which was once, six or seven years ago, often accompanied with

a great deal of hysterical agitation. She was ordered to take cod-liver oil and hypophosphite of soda, with middle diet and porter.

April 4th.—The oil made her sick. She was ordered to take the hypophosphite by itself.

April 6th.—She slept much better, and woke this morning without headache—a thing she had not done for two years. She was ordered to resume the oil.

April 8th.—She was evidently gaining ground. She had a bad headache now, brought on, it appears, by a violent altercation with another patient in the same ward. The medicine was continued.

April 15th.—She had been improving progressively since the last report. There had been no headache for the last three days. The treatment was continued.

May 2nd.—There had been no headache at all since the last report. The bowels now acted regularly without medicine. She was much improved in general health.

*Remarks on the Hæmostatic Treatment of Cholera,
Hæmorrhage, Exhaustion, &c.*

By DR. THOMAS A. WISE.

(*Dublin Quarterly Journal of Medical Science*, August, 1863.)

These remarks appear to us to be in the highest degree important, and we shall lose no time in putting them to a practical test in many cases, for the “&c.” in the title obviously includes a very wide field. We can indeed see in them a fair prospect of good for many disorders of the nervous system. What we have wanted in these disorders is a remedy which for a time will produce the very opposite effects to those of venesection, and here we conceive we find what we wanted. And what we have wanted here we have wanted also in a countless host of other diseases, for the teaching of modern pathology is, that the object to be gained is very generally the opposite of that which was aimed at when venesection was in vogue. At present we have no difficulty in recalling at least a dozen cases of epilepsy in which the fits could be averted, almost at will, by tightening a tourniquet around an arm or leg. This plan was adopted with a view to arrest an aura; it may have done good by shutting-in or shutting-off a given amount of blood.

With these few remarks we leave Dr. Wise to tell his own story in his own words:—

“ When the Spanish pilot smiled on the late Dr. Kelly, shivering under the influence of a cold fit of ague, and pointed out how easily it might be removed by the application of a garter to stop the blood of one or two of his limbs, he suggested a plan of treatment which has long appeared to me worthy of more attention than it has received. When in India I had, on one occasion, a regiment prostrated with fever unexpectedly placed under my charge; and, as I had but a small supply of quinine, and could not obtain more, I employed tourniquets to intercept the blood in the extremities, and

with a degree of success that induced me to publish the result in *McClelland's Journal of Natural History, Calcutta*. I have not the journal by me; but the result was so favourable that I frequently employed it in the cure of intermittent fevers; and I afterwards extended the application of this powerful remedy to other diseases, and propose again to bring the subject under the notice of the profession.

"The great discovery of Harvey determined the principle that we had, by means of the tourniquet, the complete command of the arterial circulation of a limb, and could, by means of a tight bandage, retard the return of a considerable quantity of blood from the extremity. Modern physiologists inform us that the quantity of blood in the whole body is about 28lbs.; and that in ordinary health there is about two pounds weight in each of the four extremities. The numbers will, perhaps, be allowed to be nearly correct, although the absolute quantity will vary in different individuals, and in different parts and conditions of the body. For instance, a person during active exercise will have the distribution of the blood all over the body considerably different from an individual in repose; and this difference will often be still greater in disease. The attack of an intermittent disease is accompanied with a congestion of blood in certain organs; and, as we have the complete control of at least a pound of blood in each limb—may we not act on this with great advantage in the cure of disease?

"The circulation may be controlled in two ways—1st, by retarding the blood in veins, and, 2nd, by stopping the circulation in arteries.

"The retarded blood in the veins of a limb as a therapeutical agent.—In patients with the premonitory symptoms of apoplexy, in severe cases of dyspnoea, in some organic diseases, and even in inflammation of particular organs, the temporary withdrawal of a certain quantity of blood from the general system, and its retention in the extremities may sometimes be used with great advantage. It is easily accomplished, by the application of a field tourniquet upon one or more extremities.

"Stopping the arterial circulation in a limb.—It must not be supposed that a clamp or horse-shoe tourniquet, when compressing the chief artery of a limb, acts merely on the part, by stopping the circulation—it powerfully affects the whole system. If applied to the femoral artery, probably a pound, of the two pounds of blood intended for the limb, is prevented passing into it, and makes its way back to the heart, causing a more rapid and forcible circulation over the diminished circle.

"Secondly.—As many diseases are local, and are connected more or less with morbid congestions of blood, which generally produce the pain and the derangement of the functions of the affected organs, by so closing a portion of the circle you thus enlarge the volume of blood, and increase the force of the heart, which has a most powerful influence in removing local congestions in the internal organs.

" It is not, however, in every case that the treatment can be

employed with the same good effect. It is in the large class of functional diseases that the partial stoppage of the circulation is of so much permanent use; and even in some organic diseases it may be employed with advantage by withdrawing so much blood from the circulating system of the part. By thus placing a ligature so as to press upon the chief artery of one or two extremities, the general mass of blood circulates through a smaller circle, and in some diseases produces a powerful tonic or stimulating effect upon the general system.

" In those sudden and appalling cases of uterine haemorrhage the effect is very marked; and the fatal result is often arrested by this prompt and energetic interference. In such cases the patient is often left in a collapsed pulseless state, without the quantity of blood necessary for carrying on the vital functions, for which the strongest stimulants are used in vain; and in a large proportion of these cases, after a faint return of animation, the patient sinks into a state of collapse, and dies from exhaustion, without any further loss of blood. In such a case, the simple means of contracting the extent of the circulation, by closing one or more of the arterial trunks, will be of great advantage: Mr. Wardrop states that the effort of raising a patient, in such a case, and accidentally closing the humeral arteries, was found sufficient for nature to rally. This will be more effectually done by raising the limb, pressing the venous blood onwards, and applying a clamp-tourniquet to the humeral and femoral arteries, by which upwards of a pound of blood, sent to each limb, is stopped, and finds its way back to the heart. This diminished vascular circle, and increase of blood, stimulates the heart's action, and the greater volume of blood has a powerful influence in strengthening the weakened system.

" In the collapsed stage of cholera, when, in many cases, the physician first sees his patient, the system is so much prostrated that the most powerful medicines have no effect, the application of the tourniquet affords the only chance of cure. This most powerful remedy immediately removes the painful cramps, and produces the same equalizing effect as blood-letting, without the debility caused by this evacuation. It likewise increases the volume of blood, which stimulates the heart to increased action, removes morbid congestions, and, changing the morbid distribution of blood from the secreting surface of the alimentary canal, sets up a new and salutary action in their place. It thus affords the most ready and most powerful means of rousing the system. By this means the purging and vomiting are stopped, the pulse becomes stronger, the heat and strength of the system are quickly restored, and time is allowed for medicines to act.

" The tourniquet may be applied to two or to the four extremities, according to the effect intended to be produced. When the individual is weak, and the state of collapse great, more care is required in emptying, by friction, the blood in the veins of the extremity to be bandaged; and the effect will be more marked if the tourniquet be applied to four extremities. It may be kept on for hours, or even for a day or two. In one case I kept the tourniquets applied

for three days—as the exhaustion was very great—with the best effects; only relaxing one or more, as it appeared necessary. When reaction has taken place, by relaxing cautiously one or more of the tourniquets, so as to allow the blood to flow to the extremities, it afforded a ready means of relief. In a pretty extensive experience I have not seen any bad effects produced by the application of tourniquets. The effect, however, varies according to the stage and severity of the disease. When the patient is stronger, or when reaction has taken place, the pressure of the tourniquets is complained of—and much care is required to prevent the patient loosening them. If it be done too abruptly, the blood spreads over the extremities, and the patient rapidly sinks."

Dr. Wise relates two cases in illustration of the danger of leaving off the tourniquets, or slackening them too soon. In cases such as these, he advises that the tourniquets should be kept on until reaction begins, when one extremity is to be set free at a time, and again tightened, if there be any sign of relapse.

CASE.—A young lady joined her parents in India; and, on a damp evening, walked along the moist bank of the river, which had been covered with water during the rains. She wore a light dress, and thin shoes, which she did not change at dinner, and went early to bed. During the night symptoms of cholera appeared, and I was sent for. The frequent and peculiar discharges, the state of the pulse, and the cramps, proved the severity of the attack. I immediately acted in the usual energetic manner, but without much effect; and in the morning I requested the assistance of an old and able physician. On learning the history, and the result of the treatment that had been employed, and as she appeared sinking, he considered there was no hope. I proposed the application of tourniquets, which he warmly recommended. They were applied to an arm and a thigh; and the result was soon most marked and gratifying. The cramps ceased, the cold and clammy skin became warm, the pulse resumed its action, and the pale sunken face became animated with a flush. I then slowly relaxed one of the tourniquets; and, having other urgent calls, I left the patient under the charge of my friend, with strict injunctions not to touch the tourniquets until my return, and pointed out the danger of such a proceeding. He understood, and carefully observed, my instructions; but, as the young lady dozed, he left the room, and did not return for some time, when he found all the unfavourable symptoms returned; and then it was he learned the young lady herself had persuaded her sister to unscrew the tourniquets; the blood that was animating the body flowed again to the extremities—the heart, weakened by the loss, ceased to act with the same energy—and all the fatal symptoms returned, and she died that night.

Dr. Wise also gives half a dozen cases in which tourniquets were used, and in which, in all probability, medicines would have been used in vain. This is one:—

CASE.—Shakh Hoosen, admitted into hospital, under the care of Dr. Eastall, with the usual symptoms of cholera. The pulse was imperceptible at the wrist—body covered with cold perspiration—no secretion of urine—and the evacuations from the bowels were passed involuntarily. Four grains of calomel, and four of quinine, with a grain of opium, were given, and washed down with brandy and spiced warm water. As the unfavourable symptoms continued, four tourniquets were applied to the four arterial

trunks of the extremities, and at the same time a draught of the *drogue amere*, laudanum, and peppermint water was administered. In the evening he was found without pain, the action of the heart stronger, and the body warmer. He complained of the tourniquets, and loosened them himself during the night. In the morning they were again tightened. All the bad symptoms had disappeared, he was warm, his voice was stronger, and he felt better. The improvement continued during the day, and two of the tourniquets were removed at night. He continued to improve, and he soon left hospital quite well.

The final conclusions at which Dr. Wise arrives are these, and with them we take leave of the subject for the present :—

“ 1st. By its obstructing the circulation it immediately stops the distressing cramps of the extremities in cholera.

“ 2nd. By increasing the quantity of the circulating fluid in the trunk, and thereby stimulating the heart’s action, it removes morbid congestions, stops the secretions from the bowels, increases the animal heat, and powerfully tends to restore health.

“ 3rd. By improving the vigour of the system, medicines act more powerfully, and in a more salutary manner in removing morbid actions.

“ 4th. When the reaction has taken place by loosening the tourniquets with care, the determination of blood to the internal parts is diminished by its diffusion over the extremities, upon which the tourniquet had been placed. They are immediately to be re-tightened when there is any coldness or weakness experienced or any tendency to relapse. This must be most carefully watched for and prevented.

5th. By increasing the volume of blood in the contracted circulation, the force of the heart is increased, local congestions are removed, and the whole system is strengthened.

On the Diagnostic Value of an Accented Cardiac Second Sound.

By DR. J. WARBURTON BEGBIE, Physician to the Royal Infirmary, Edinburgh.

(*Edinburgh Medical Journal*, June, 1863.)

As the result of careful observation and continued attention, Dr. Begbie has found that, after excluding the accentuated pulmonary second sound, and the intensified aortic second sound in some cases of hypertrophy and dilatation of the left ventricle, *the accentuated second sound in the aorta is an indication of aortic aneurism or of dilatation of the aorta associated with atheromatous degeneration.*

An accentuated pulmonary second sound is no uncommon phenomena; and its value in relation to the condition of mitral valve constriction is well known to all careful auscultators. Of this sound, it is scarcely necessary to say, Dr. Begbie is not speaking.

A case of aneurism of the aorta, pointing externally and bursting through the lung into the left pleura, is used by Dr. Begbie in illustration of what he has to say.

CASE.—S. M., æt. 36, under my care in the Infirmary, Ward V., during August and September, 1862. Between the second and third left ribs, near their cartilages, a pulsating tumour was detected on the patient's admission. On auscultation, a soft bruit was audible over the tumour; and at the base of heart, as well as over the upper bone of sternum, a very loud ringing second sound. The latter phenomenon never varied during the patient's six weeks' residence in hospital. He died suddenly, after expectorating a little blood. On examination of the body after death, serous fluid and coagulated blood, to the amount of more than half a gallon, were found in the cavity of the left pleura; the heart was pushed downwards and backwards; it weighed fourteen ounces. *The valves were perfectly healthy.* An aneurism was found commencing abruptly an inch and a half above the semilunar valves—the whole vessel suddenly dilating to a point immediately beyond the origin of the left carotid, where the dilatation as suddenly ceased. The pouch so formed was six inches in length; it passed behind and was applied to the back of the manubrium sterni, and made its appearance externally between the second and third left ribs. The left extremity of the sac was intimately united to the left lung, the edge of which had become thinned by pressure, and the pleura having then given way, allowed the escape of the aneurismal contents into the pleural sac.

In the foregoing case the peculiarity of the second sound was of comparatively little value in leading to the recognition of the aneurism, other and still more distinctive signs, especially the visible pulsating tumour, of that condition being in existence; but the accentuated sound led to the diagnosis of the competency of the semilunar valves, which *post-mortem* examination confirmed. In the following case the accentuated second sound was the earliest noted reliable sign of aortic aneurism.

W. M'A., æt. 35, a hawker, was first seen by me in March, 1862, complaining of slight chest symptoms, particularly cough and expectoration of a little phlegm. Had not been a sober man.

Condition on first examination.—Has a slight bronchitic affection. Heart's second sound markedly accentuated over the aortic valves. No other auscultatory phenomenon connected with heart or great vessels.

I had frequent opportunities of seeing and examining this man up to November 6th, when he entered the Infirmary, becoming a patient in Ward IV. During this time his general health had failed considerably; he had become thinner, feebler, less able for his occupation, though still moving about and doing something as a traveller.

On 6th November the following notes of his condition were made. Has been suffering from dyspnoea, which has seized him on a few occasions suddenly, and without any previous effort or exertion having been made. Cough is somewhat clanging in character. Has some pain and peculiar sense of weight in region of sternum. Over the left portion of manubrium there is visible pulsation—the latter readily distinguished on pulsation. Left radial pulse is feebler than right. Murmur of soft blowing character accompanies first sound over the seat of pulsation, and is heard less distinctly over the base of heart. The second sound at base is of a loud *booming* character. Respiratory sounds in upper part of left lung, feeble. Posteriorly there is a little bronchial stridor.

This man, so far as I know, survives: he left the Infirmary about eight weeks since. With such signs as those detailed, the existence of aneurism becomes unquestionable, they have become gradually developed in succession to the accentuated second sound, the earliest noticed of all.

After relating this case Dr. Begbie proceeds to say:—

“ Of this kind I might furnish other examples, several are known

to me; and the opportunity has occurred for directing the attention of students to these, in the ordinary course of clinical instruction.

"I have further to remark, that a similar condition of the second cardiac sound may be caused by dilatation of the aorta, associated with more or less of atheromatous degeneration. To distinguish between the two—in other words, to know when the accentuated second sound is due to aneurism and when to dilatation of the aorta, is not always easy. Reliance is chiefly to be placed on the associated physical signs in the former case, more particularly prominence, pulsation, extended percussion dulness, and the signs of internal pressure. If atheromatous dilatation exist, and that is the special condition, independent of aneurism, which gives rise to the accentuated second sound, there will probably be more or less pulsation in jugular fossa, atheromatous condition of superficial pulses (radials, temporal arteries, &c.) noticeable, and probably the arcus senilis.

"The following points appear to me to be of importance in endeavouring to explain the mechanism of an accentuated second sound, under the circumstances now considered:—

"1. The condition of the vessel, both in cases of aneurism and of dilatation with atheromatous degeneration, being such as greatly to diminish, if not to destroy, the support given to the circulation by the artery, there results an increased recoil of blood on the closing or closed valves.

"2. It is possible that a morbid condition of the valvular apparatus itself heightens or intensifies the sound. The valves are not incompetent, but in such cases they are sometimes found thickened, and even presenting a hard surface at parts.

"3. Something may, I conceive, be due to the increased calibre of the vessel, in connexion with the altered condition of its internal tunic, in causing the peculiarity of sound.

"But in whatever way the phenomenon is to be correctly explained, there can be no doubt of its existence being entitled to very considerable value as a clinical fact. I have noticed that the accentuated second sound is most readily appreciable over the aortic valves in both conditions. In the cases of dilatation of the aorta it has, however, been more decided in character over the manubrium sterni than in aneurismal cases. I may add, that in the majority of cases observed by myself, in which the accentuated second sound has existed under the circumstances now detailed, the expression, *booming* second sound, or second sound with *ringing boom*, has best described the acoustic character of the sound itself. I have known the booming sound continue for many weeks, and in one remarkable case of aneurism lately observed (Walker, in Ward V., and afterwards in Ward IV.), for months, and therafter become at first obscured, and ultimately entirely replaced by a loud diastolic murmur, telling plainly that the semi-lunar valves had become insufficient owing to the extension of the disease towards the heart."

On Australasian Climates and their Influence in the Prevention and Arrest of Pulmonary Consumption.

By S. DOUGAN BIRD, M.D., L.R.C.P. Lond., Physician to the Benevolent Asylum, Melbourne.

(London : Longman, Green and Co., Paternoster-row.)

Himself a *poitrinaire*, the writer has personal as well as professional experience of the effects of antipodal climates on consumption. More than three months ago, two of the best stethoscopists in London pronounced his lungs tuberculous, and to this opinion daily haemoptysis, rapid loss of flesh, shortness of breath and known hereditary predisposition gave but too sure confirmation. A six months' rest from business, occupied in amusing travel, with careful treatment in the meantime, failed to do more than check the more urgent symptoms; and, therefore, a total change by a voyage to Australia was recommended, and at once undertaken. In less than three months from his landing in this colony the patient gained sixteen pounds in weight, lost all his symptoms, and remains at the present time in excellent health. Impelled by an easily conceivable gratitude towards the climate which has wrought these great results, and by a conviction that others, in "the old country," who are suffering as he once suffered, may by a change to the antipodes benefit as he has benefitted, Dr. Bird has penned this work. It is a work of very unusual interest. It makes known to the English reader for the first time in a trustworthy form, a series of climates unrivalled in their general salubrity, and peculiarly calculated to promote the recovery of cases which have hitherto been the despair of physicians in England; it makes known refuges to the phthisical, such as would be sought for in vain in Europe or Africa, and where the invalid, although separated thousands of miles from his birth-place is still at "home"—at home in language, in thoughts, in feelings, in manners, in habits with those about him—an advantage of no ordinary character. "For to live," as Dr. Bird says, "and (if it must be) to die amongst one's own people is no small consolation to an invalid."

Dr. Bird after a preliminary chapter on the nature of tuberculous and scrofulous disease, and the principles which should guide its treatment by change of climate, contrasts the vital statistics of the northern and southern hemispheres, points out the method of utilizing the peculiarities of antipodal climates for the prevention or arrest of the early stages of consumption contracted in Europe, and, finally, terminates the work with a brief sketch of colonial life and Australian scenery.

"It needs but a glance at the globe to show that the southern hemisphere must present remarkable and distinctive differences of climate from the northern. In the southern hemisphere water greatly preponderates over land, and the land is so far removed from the influence of the antarctic regions that excessive climates such as exist in the northern hemisphere have no place.

"The geographical position and geological conformation of the enormous sweep of coast east and west of the great Australian island, from Cape Leeman to Bass's Straits," says Dr. Bird, "give it characteristics of climate absolutely distinctive, as no other part of the world is placed under the same conditions; and it offers a special contrast to those parts of the northern hemisphere which are exposed to the influences of the Gulf-stream. The prevailing winds during a great part of the year, are from the west and south, or south-east; from the two former quarters they sometimes blow continuously for weeks together, and having traversed such a vast expanse of unbroken ocean, unaffected by any terraneous influences, they have a purely marine and highly ozoniferous character, such as are only met with in the trade winds far from land. From the general absence of high mountain ranges on the continent, and the general tendency the ranges of the coast bear to the north-east and south-west, the whole of the settled districts within a few degrees of the ocean enjoy more or less of the tempering, equalizing and ozoniferous influences of these west and south winds, without suffering the corresponding amount of damp and cloud which they bear with them in Europe. For an ocean wind, so far from being of necessity accompanied by rain and cloud—as we are accustomed to see it in the North Atlantic, from the reasons I have mentioned—brings with it bright sunny weather, as a rule. It hardly ever rains in the trade winds, far from land; it is only when some lofty island forms a nucleus-point of attraction for the result of co-operation that these are condensed into vapour or rain.

"The climate of the colony of Victoria may be taken as a medium type of the climate of Australasia. It is cooler than South Australia, New South Wales, or Queensland; warmer and drier than Tasmania, or New Zealand's southern districts.

" . . . The *mean yearly temperature* of Melbourne is about the same as that of Montpellier, Marseilles, Nice, Genoa, Pau, or Florence, which are on or near the corresponding isothermal in the northern hemisphere; but that of Melbourne has greatly the advantage of these in the fact that the *mean range of the seasons* is far less: that is to say, it has a warmer average temperature in winter, and a cooler one in summer. In this respect it is on a par with Lisbon, which is considered the model climate of Europe as regards temperature, having a winter average equal to, or higher than, that of Naples, Valencia, or Barceloua, whose yearly and summer averages are considerably higher.

" . . . Looking at the question of temperature from existing data of yearly and seasonal means, the great superiority of the Victorian climate to those of Southern Europe is seen at a glance; but such figures do not give a sufficiently close view of the medical aspects of the question. Although the average summer heat is moderate in the neighbourhood of Melbourne, being only 4° higher than that of London, occasional extremes of heat occur under the influence of the 'hot wind,' when the thermometer rises even so high as 100°, 105°, or 111° in the shade. Such a temperature occurs usually in December or January, but is very exceptional, and lasts but a few hours at a

time. The lowest temperature ever experienced is 32°, and this is very rare.

Of the hot wind, the "bête noire" of new arrivals in the colony, Dr. Bird states that, although the temperature at times rises during its prevalence higher than in the sirocco of Sicily and Malta, and even exceeds Indian heat, this wind "never interferes with business, and hardly with pleasure," while, "to a new comer, the little inconvenience he experiences from these high temperatures is marvellous, though the cool southerly sea-breeze is delightful to every one."

"To summarize the main characteristics of the Victorian climate, it is a temperate, warm climate, whose average summer heat is but two or three degrees above that of London; while in winter it is warmer than Nice or Naples, and as warm as Valencia or Barcelona, and actual cold is never felt at or near the sea-level. The air is generally dry, always stimulating and ozoniferous, but so tempered by the prevalence of ocean winds, that it is prevented from becoming irritating, like that of Nice or Provence. With this is a very large proportion of sunny weather during the whole year."

The mortuary statistics of Victoria amply testify to the great healthiness of the climate, and the little liability of the colonists, as compared with home populations, to tuberculous disease and affections of the respiratory organs.

Good examples of all the varieties of climate, air, and soil required for the treatment of the local phases of pulmonary consumption, whether in winter or summer, are, according to Dr. Bird, found in the Australasian colonies. Launceston, in Tasmania, (twenty-four hours by steamer from Melbourne), "fulfils every condition which we could require for the cases to which Pau is beneficial." The winter climate of Launceston is compared by Count Strzelczecki to that of Lisbon, while in summer it is not warmer than Cheltenham. "There are other parts of the northern coast of the island whose winter climate is identical with that of Algiers, or Sicily, considerably warmer, and less damp and relaxing than Pau, without the dry and stimulating air of the mainland." Hobart Town and the neighbourhood is to be regarded rather as a summer than winter residence for invalids, although it would take high rank as the latter in Europe, its coldest month having a mean of 45·82° Fah. The whole of Tasmania is highly salubrious. "Auckland, in the northern island of New Zealand, is another good example of a moist, warm, and rather relaxing climate, suitable to the irritable, dry, bronchial complications of consumption; but it has the disadvantage of being windy and boisterous." "But the winter climate *par excellence* of these colonies (continues Dr. Bird) is that of Moreton Bay, and its neighbourhood, in Queensland, not far from the southern limit of the tropics. Here the average winter temperature on the coast is 62° or 63°—warmer even than Madeira—an air soft and soothing, without being relaxing, and sunny, brilliant weather. This of all climates that I ever heard of is the one most likely to prolong the life of an advanced case of consumption in an irritable constitution, whose bronchial membrane resents any fall in the temperature. And here, too, the invalid may gradually adopt a more stimulating air as he

finds his local irritation quieted down. Inland, a few miles from the coast, the land rises, and the climate, equally sunny and enjoyable, is more dry and tonic in its character. A considerable number of instances are familiar to the inhabitants of the more southern colonies of persons apparently in a hopeless stage of disease recovering sufficiently in Queensland to follow ordinary avocations."

The temperature of South Australia may be compared with Malta or even Tunis, but its general salubrity far excels the latter places. Many of the northern districts of Victoria have dry, warm, and tonic climates, but less stimulating than those of South Australia. Sydney possesses a favourable winter and spring climate for an invalid. In summer its heat is frequently oppressive.

"Taking it all in all," Dr. Bird writes, "there is perhaps no climate in the world so generally suitable to consumptive cases at all seasons of the year as Melbourne and its neighbourhood. With the winter temperature of Rome or Barcelona, the southern littoral of Victoria is not hotter in summer than Paris; less moist and boisterous than New Zealand it equally falls short of the excessive dryness of South Australia, and the close damp heat occasionally experienced at Sydney. Although as winter or summer climates we may find the other colonies more suitable to individual cases of advanced consumption, none of them are so suitable all the year round to early cases arriving from Europe."

We heartily commend Dr. Bird's work to our readers. It is charmingly written, is singularly interesting, and forms a most valuable addition to medical climatology.

II.

REPORT ON MIDWIFERY.

The Diagnosis and Treatment of Diseases of Women, including the Diagnosis of Pregnancy. Founded on a Course of Lectures Delivered at St. Mary's Hospital Medical School.

By GRAILY HEWITT, M.D. Lond., M.R.C.P., Physician to the British Lying-in Hospital ; Lecturer on Midwifery and Diseases of Women and Children at St. Mary's Hospital Medical School ; Honorary Secretary to the Obstetrical Society of London.

(8vo. London : Longman, Green and Co. pp. 628.)

This work by Dr. Graily Hewitt, who is well known as one of the most painstaking of modern physicians, deserves a more extended notice than the limited space at our disposal permits. As the author explains in his preface, the primary object of the work is to afford increased facilities for diagnosis. Doubtless, a correct diagnosis is all-important, for, as Mr. Hewitt remarks, "without diagnosis, no advance can be made but on the imperfect basis of surmise and conjecture;" in other words, to use a homely and well-known proverb—"the knowledge of the disease is half the cure." In forming this correct diagnosis, Dr. Hewitt takes as his ground-work the value of symptoms or signs of disease ; for the experienced practitioner, who wishes to establish a conclusion on any particular case, will, unconsciously or otherwise, necessarily pass in review all the morbid conditions or diseases with which he knows the sign in question to be associated, carefully bearing in mind the many cases exceptional to general rules which may have been noticed by himself or recorded by others. The plan is, in short, a thoroughly exhaustive one ; all the possible causes of certain symptoms being set forth, and all the differences abstracted, to use the phraseology of the logicians, it is hardly possible that important disorders should escape attention. In order that the reader may duly appreciate, and profit by, the manner in which the author has carried out this plan, he must refer to the work itself, which will be found to be exhaustive in more senses than one, as it includes the consideration of the whole range of the important class of diseases comprised in the expression, Diseases of

Women. Out of so many topics it is difficult to select illustrative passages. In any topic it would be easy to find much that is at once interesting and important, and more especially, perhaps, in the remarks on inflammation of the uterus, on the cause of pain in dysmenorrhœa, and on treatment generally. The chapter on diseases of the ovary, for example, contains a very able *résumé* of the natural history of ovarian tumours and dropsy, and much valuable information bearing on the comparative advantages of ovariotomy, tapping, the system of doing nothing, &c., &c., and the contents of this chapter shall furnish a sample of the contents of the companion chapters.

Regarding the natural history of ovarian dropsy, "the interest felt," says the author, "attaches for the most part to the prognosis of cases of ovarian dropsy or tumour in which the tumour is as large or larger than the head of a child, because these are the cases concerning which our advice and opinion are most frequently requested."

"What, then, is the natural termination of these cases if left to themselves?"

From an analysis of the cases recorded by Mr. Safford Lee, by Dr. Robert Lee, and others, it is endeavoured to procure an answer to the above question.

Respecting Dr. Robert Lee's cases it appears that, "on the most favourable interpretation of individual cases, 84 per cent. of those cases died, and so far as the majority of these are concerned, the death occurred within two years. On the other hand, in 16 per cent. of the cases an opposite result ensued, or at all events there is no proof that such an opposite result might not have ensued. It is natural to conclude, however, from an examination of the above list, that 16 is a very high figure, and that had all these cases been allowed to pursue their natural course, the actual per centage of favourable results would have been nearer 10 than 16. The general conclusion deducible from Dr. Lee's cases is, that taking the case of a woman, the subject of 'progressive' ovarian tumour or dropsy to the extent contemplated in the above-mentioned category of cases, the chances are as ten to one that the case will end fatally in less than two years, the disease being left to itself or palliative measures only, such as tapping, being employed." (p. 584.)

From an examination of Mr. Safford Lee's cases it appears that, in 76 per cent. (94 out of 123) the duration of the disease "was under five years. But it is necessary to analyse more fully the data in question in order to compare them properly with those afforded in Dr. Lee's cases. It is more satisfactory, as before remarked, to have the whole experience of one individual.

"In Mr. Safford Lee's table we find 20 cases of Dr. Kilgour's—of these 20 cases, 17 died in three years and under—viz., 85 per cent., a figure very closely approximating to that obtained from Dr. Lee's cases.

"In 12 cases reported by Dr. Ashwell, 9—i.e., 75 per cent., died in the same period—three years and under. In 10 cases reported by Mr. Safford Lee himself, 9—i.e., 90 per cent., died within three years. The experience of one reporter, Dr. Macfarlane, was more favour-

able, for, of the 14 cases reported by him, the duration was four years or under in 4 cases, and of the other ten 4 survived twelve years, and 4 as long as sixteen years. Dr. Macfarlane's experience would seem to have included a larger number than usual of exceptional cases.

"As a guide to actual results which may be expected in practice, the cases of Dr. Robert Lee and the particular cases just referred to as contained in Mr. Safford Lee's tables, are worth more than those collected from various sources, for reasons already stated. Such cases as those in which it is recorded, that the disease lasted 20, 30, or even 50 years, do undoubtedly occur: much mischief has resulted, however, from looking on such cases as typical ones, while the large majority of the cases, the end of which is naturally death in a much shorter time, have been considered as the exceptional ones.

"Taking everything into consideration, we shall not be probably far wrong in drawing from Dr. Lee's and from Mr. Safford Lee's cases, the conclusion that the probable duration of a case of ovarian disease of progressive character is, in 85 to 90 per cent. of the cases, two, or at the most, three years; of the 'apparently' stationary or chronic cases, the prognosis is more favourable; but in such cases the disease is liable at any moment to start into fresh activity.

"The foregoing observations give some idea—an idea which cannot be very wide of the truth—as to the nature of the evil we have before us, when a patient presents herself with ovarian dropsy. The first question we naturally put to ourselves with a case of this kind to decide upon, is, does this case belong to the fortunate series, the 10 or 15 in the 100, or is she one of the 90 who must die in the course of two or three years if unrelieved? It must be confessed that at present we have, as a rule, no means of enabling us to decide—at an early period of the growth of the tumour, and when the tumour does not exceed six or seven inches in diameter—what the future of the case will be. In some few cases the cancerous nature of the tumour is obvious at an early period; in some few cases also, the great unevenness and irregularity of the surface point to the presence of several cysts, a circumstance indicative for the most part of rapid growth—and these cases lay open their future before us more quickly; but in the large bulk of cases it is not so. We generally have to wait until the tumour has grown to a larger size before we are able to say much as to the prognosis; and it is the rapidity of growth, taken together with the nature of the growth itself, which then guides us to an opinion.

"So long as a tumour, which is smooth externally, and apparently composed of a single cyst, continues tolerably quiescent, increasing but slowly, and without evidence of formation of fresh cysts (for the determination of which examinations must be made from time to time), so long our prognosis will be tolerably favourable, and we may expect that the case will prove to be one of the fortunate 10 per cent. series. Rapid increase, new formation of cysts, addition of solid matter to the tumour, addition of ascites, increased pressure signs in the pelvis, rapid refilling after tapping—all these are signs

of bad augury, and should induce us to place the patient in the unfavourable series, and to act accordingly."

The results of the operation of ovariotomy, as practised in this country of late years, are brought up to the present time, and the author gives the following as the results of the operations performed by operators up to September, 1863.

Name of Operator.	Total Number of Completed Operations.	Cures.	Deaths.
Mr. Baker Brown . . .	58	32	26
Dr. Clay	107	73	34
Mr. Jonathan Hutchinson	7	4	3
Mr. Lane	11	8	3
Dr. Tyler Smith	19	15	4
Mr. Spencer Wells . . .	74	49	25

"The average percentage of cures will be found to be 65; the highest and lowest percentage being 55 and 78 respectively. This is very satisfactory. If the results of recent operations only—that is to say, of operations practised within the last four years, had been given, it would be seen that a cure was effected by those who have operated most largely. Mr. Baker Brown, Dr. Clay, Dr. Tyler Smith, and Mr. Spencer Wells, in considerably over 60 per cent. of the cases." (p. 589.)

"On the whole," says Dr. Graily Hewitt, "the present aspect of the operation warrants us in taking 65 as the percentage of cures which may be expected when the operation is undertaken by experienced operators; and, substituting this figure for 53, which expresses the results of Dr. Clay's statistics, the case stands thus: In a case of ovarian cystic disease, the chances of recovery after ovariotomy are as 65 to 35, taking one case with another."

Lastly, Dr. Graily Hewitt considers dispassionately the arguments which have been brought forward against the operation of ovariotomy:—"It is urged that women may live a long time with palliative treatment. The value of this argument is tested by reference to the natural history of ovarian disease. The argument only holds good in respect of cases where the disease is evidently not of a progressive character, and such cases would not be considered cases for ovariotomy. Although in individual instances life is prolonged even under apparently unfavourable circumstances, yet, what we have to consider first is the fate of the bulk of the cases which present themselves for treatment (see the analysis of Dr. Lee's cases at p. 583), and how that fate is to be averted.

"It is urged also that the diagnosis is difficult, and that it is at times impossible to say whether a tumour be ovarian or uterine. This is only an argument for increased attention to the subject of diagnosis. Serious mistakes need occur but very rarely.

"In the next place, it is urged that ovariotomy is really a moro

dangerous operation than the published statistics prove. This statement is met by the statistics of several well-known and well credited operators, showing that the operation is really a very successful one in good hands. To what extent it is a successful operation as now practised has been already shown (see p. 588). Further, there is every reason for believing that the mortality will yearly become less, and that *dernier ressort* operations will become fewer and fewer in number.

"The most important arguments used against the operation are those of Dr. West, in his very impartial and elaborate analysis of the subject. These must now be considered.

"To Dr. West's first argument, that the rate of mortality from ovariotomy is not decreasing (the date of this statement is 1858), it is sufficient to reply that late experience does not sustain it, and that, on the contrary, the mortality is decreasing. In proof of this, Mr. Baker Brown's experience is very instructive. The percentage of success obtained by the operator was formerly 31; the percentage of success in later operations has been 65. The next argument of Dr. West is, that the operation is most successful when the disease is advancing tardily, or where it has become stationary. Of late it has been shown that recovery has frequently followed in the very worst cases; and on the other hand, death occasionally results when everything seems to promise a successful result. There is no proof that a fatal result is necessarily connected with any particular condition of the patient whatsoever.

"Further, Dr. West urges that, in the cases apparently most favourable for operation, it is a venture, and that we cannot give in any case a sure prognosis. This is undoubtedly true; the operation is a venture, but a venture less considerable than it was, and one which it can be demonstrated by figures, it is to the advantage of the patient to run, under certain circumstances.

"There is another objection mentioned by Dr. West, viz., the uncertainty which exists as to the possibility of performing the operation. 'There is no other operation,' says Dr. West, 'concerning which the chances are nearly one in three that some unforeseen difficulty will prevent its completion.' The proportion 'one in three' of failures to complete the operation, is, judging from Dr. Clay's statistics, too high, *i. e.* excluding cases in which the diagnosis was wrong, and in which the operation was for this reason not completed; and reasons have been already given (see p. 590), for concluding that the percentage of failures to complete the operation may now be taken at about 10. And lastly, since the date of these remarks by Dr. West (1858), it cannot for a moment be denied that much has been done to remove the operation of ovariotomy from its place by the side of those exceptional proceedings, the expediency of which must be determined by each one for himself after a careful consideration of the peculiarities of the case, and the idiosyncrasies of the patient.

"Finally, the argument used by Mr. Erichsen, at the late meeting of the Royal Medical and Chirurgical Society, at which Mr. Wells's paper on ovariotomy was discussed, may be adduced on this impor-

tant question. ‘It is old and trodden ground,’ says Mr. Erichsen, ‘to compare ovariotomy with the result of the operations for hernia, ligature of arteries, &c.; and in these cases also the comparison is scarcely fair, as these are operations of necessity, whilst ovariotomy is an operation of expediency, and not of immediate and imperative necessity. But compare it with ‘amputations of expediency’ of the lower extremity. He would take for this purpose the statistics of a most able paper published two years ago in the ‘Transactions’ of the Society, giving the results of amputations performed in one of the largest hospitals in London—Guy’s. In that paper Mr. Bryant stated that the mortality after amputation of the lower extremity for tumours was 36 per cent., and the mortality after ‘amputations of expediency’ of the leg was 68 per cent. Compare this result of amputations performed under the most favourable circumstances, by men of the greatest skill and judgment, with those of ovariotomy, and the advantageous position of the latter operation is at once seen. With the aid of the facts and conclusions first stated, we may next consider the *indications for ovariotomy*. The average opinion among those in favour of this operation, may be stated as being to the effect that when the ovarian tumour is growing fast, and when by reason of this, or in some other manner, life is threatened at no distant period, the operation is to be recommended. But it is necessary to be more explicit.

“If our examination convinces us that the tumour is of cystic nature, that it is growing fast, that it is made up of three or more cysts, and the general health is threatened, this seems a case for ovariotomy. Equally so if the tumour be partly cystic, partly solid, this solid matter not being cancerous. The alveolar tumour of the ovary falls under the same category, and also cases of dermoid or fat cysts ‘progressive’ in nature. But if the ovarian tumour be simply fibrous, this is scarcely a case for ovariotomy. An operation may possibly be justifiable in such a case, but scarcely on the ground that life is threatened by the presence of the tumour in question.

“Upon the next class of cases it is more difficult to pronounce an opinion. They are cases in which there is only one cyst in the ovary, or possibly two, and the disease is not strictly a progressive one; or, at all events, this quality of it has not yet declared itself. It is quite clear that in very many such cases ovariotomy is not called for, but there are cases in which good reasons might be given for preferring to recommend ovariotomy—viz., where there is a rapid formation of fluid requiring frequent tapping, and threatening life in this manner. A tendency of this kind is hardly less destructive to the patient than the tendency to rapid formation of other cysts. The arguments for ovariotomy in cases where the ‘badness’ of the case falls short of that just spoken of, are, that the earlier the operation is performed the safer it is, and the less risk also that the operation will be interfered with by the presence of adhesions. The difficulty experienced in deciding as to what is the best thing to be done in individual cases is one which cannot be got over by any amount of generalization on the subject; and, in a doubtful case, small things turn the balance.

"Another class of cases in which ovariotomy might be performed are those in which, although the case is not a 'favourable' one for operation, the disease is so far advanced that the patient must otherwise certainly die soon, and where the operation might possibly save life.

"It will be observed that the indications for ovariotomy chiefly resolve themselves into two—viz., the necessarily progressive nature of the disease pathologically considered, and the presence of such marked failing of the general health as to show that from radical measures only good can be expected. There is a special class of cases, as pointed out by Dr. Tyler Smith, in which patients insist on the performance of the operation, the idea of a possible operation looming in the distance being, to them, more intolerable than the present risk." (pp. 591—4.)

The *contra-indications* are next considered in detail. The author concludes with the remark—"The decision for or against ovariotomy should be left to the patient or her friends; it is for them to take the responsibility. It is our duty, firstly, to make a diagnosis as accurately as possible, taking the whole circumstances, past and present, into consideration; secondly, to make, to the best of our ability, a prognosis of the case, and to lay before the patient and her friends the results arrived at; and, if possible to state the chances for or against her numerically, it is better to do so.

"For reasons which have been already sufficiently alluded to, it is occasionally most difficult to put our prognosis into a numerical shape, but until we can do so, a decision for or against ovariotomy cannot be come to satisfactorily; and the patient must be informed what are the probabilities of her life being saved by the different methods of treatment, ovariotomy, tapping, &c., respectively." (p. 597.)

The other methods of treatment applicable in cases of ovarian dropsy or tumour, receive their due amount of attention; and, as will have been gathered from the foregoing extracts, the author has taken considerable pains to show how we may draw from the condition of the patient, indications as to the course of practice which ought to be pursued.

In conclusion, we would heartily commend Dr. Hewitt's work as a sound guide, not only in diagnosis, but also in treatment—a double commendation, which we could not apply to all text-books on the subject.

On Ovariotomy in Great Britain.

By MR. T. SPENCER WELLS, Surgeon to the Samaritan Free Hospital, &c.

(*Transactions of the Royal Medico-Chirurgical Society*, vol. xlvi. 1863.)

This is a paper of more than ordinary value and importance. It contains (what was much wanted) a clear and concise history of the operation, and it gives the results of Mr. Wells's very large experience in it; and in doing this, it does all that is needful to remove

the doubts which exist in many quarters as to the propriety of an operation which in reality is not less justifiable than any other capital operation.

Mr. Wells has performed ovariotomy in 50 cases, with 33 recoveries and 17 deaths: he has commenced the operation, but not completed it in 3 cases, without any damage to the patient: and he has made an exploratory incision in aid of diagnosis in 3 cases, with a fatal result in one of them. This experience and these results entitle Mr. Wells to speak on this subject with peculiar authority. In particular they remove one objection which, more than any other perhaps, has been oftenest urged against ovariotomy, viz., the difficulty of diagnosis. Upon this point, however, and upon any other, it is best that Mr. Wells should be left to speak for himself.

"If it were possible that a skilful surgeon could open the abdomen with the intention of removing an ovarian tumour—or in the belief that an ovarian tumour was present, after careful examination of a patient—and yet in one in ten, or one in fifteen cases, no such tumour existed, I should at once confess that this was a very strong argument against admitting the principle of the operation. But as no such mistake was made in any one of the cases now before the Society, nor in any one of the numerous cases in which I have simply tapped, or have injected iodine, it must be considered as sufficiently proved that the alleged difficulty of diagnosis is greatly exaggerated.

"Another error, which, if uncorrected, would retard the progress of the operation, is a belief that it is one of so very grave a nature, and so uncertain in its results, that no surgeon can do more than make a rough guess at the probable issue in any given case. Because a very favourable case has sometimes terminated unfavourably, while a very desperate one has occasionally succeeded, it has not only been argued that the rules which guide us in estimating the risk of other serious operations do not apply in the case of ovariotomy; but it has been gravely maintained that this operation stands alone, and that the more the general health of the patient has been broken down by the disease, the more the peritoneum has been changed from its normal state by distension and adhesions, the greater is the probability of success. This pernicious error, which has led to many promising cases being deferred until too late, or until what would have been a very simple operation has become a very complicated and difficult one, I am most anxious to correct. On looking over the above table, I am reminded of some very hopeless cases of large tumours, with firm adhesions, which I removed successfully from women who were very much broken down by the disease; and I see one case which was in every respect most favourable, but in which death occurred from tetanus. I see another which was fatal, but which, in all probability, would have been successful, had I known at the time of the operation all that I have since learned and endeavoured to teach, as to the mode of securing the pedicle, of closing the wound, and of restricting the use of opium. But classing cases of this kind among those exceptional occurrences which every surgeon who has much experience of capital opera-

tions occasionally meets with, and accepts as lessons to be cautious in prognosis, when so many unforeseen circumstances may arise to disturb the most careful calculations, I can state most distinctly that ovariotomy does not differ from other serious operations with regard to the rule that the better the general health of the patient, and the smaller the injury that is done in the removal of any diseased part, the greater is the probability of success.

" Then as to the condition in which a patient is placed before and after operation, it is to be observed that when I began to perform ovariotomy it was held that a patient should undergo a long course of preparatory treatment, and that during and after the operation she should be kept in a close room filled with hot vapour. A state of copious perspiration was encouraged, and opium was given in such large and frequent doses, that some patients who died were not killed by ovariotomy, but were poisoned by opium. In my earlier cases, I followed the traditional routine; but I soon found that in some cases no opium need be given, and that when it was wanted to relieve pain, very moderate doses, repeated according to the continuance or recurrence of pain, were quite sufficient. Brandy, wine, and strong beef-tea were also given from the first by some operators, while one kept his patients on the most meagre diet. I avoided both extremes, finding that in most cases little or no stimulus was needed during the first two or three days, and that the patients did much better on barley-water, gruel, or arrowroot, the quantity being regulated entirely by the appetite; animal food not being given until the fourth or fifth day, and stimulants being administered or not in accordance with the state of the pulse and the general condition of the patient. I also found that the sickness and faintness which were supposed to be the proofs that large quantities of stimulants are required, depended in a great measure on the practice of keeping the patients in an atmosphere artificially heated and moistened, and that when the room was kept warm by a large open fire, and fresh air was admitted freely by an open window—the patients being protected from currents of cold air by a screen and a full supply of bed-clothes—the condition after the operation differed from the healthy state much less than under the former plan of treatment. I have known patients declare that the night after the operation was the best they had had for weeks, and some have recovered without taking a single dose of any sort of medicine. It may be seen that of my last fifteen cases, fourteen have recovered or are convalescent. I attribute this increasing success to the fact that in all these cases, even in winter, a window has been kept open night and day (except when the patient was uncovered for dressing), while the room has been warmed by an open fire kept constantly burning.

" I have trespassed so long upon the attention of the Society that I cannot at present enter upon the consideration of the mode of performing the operation, the instruments found most useful, or the best mode of meeting the various difficulties which may embarrass the surgeon in complicated cases. And these are all matters of detail, well deserving of careful study, it is true, but still of far

inferior importance to the question whether the principle of the operation is to be acknowledged by this Society. I shall, therefore, conclude by referring to the condition of the patients who have recovered as a proof that when they escape the immediate dangers of the operation, their health becomes remarkably good.

"It may be seen by reference to the table that one patient who recovered died ten months afterwards of cancer of the peritoneum, and one two years afterwards of hemiplegia; but all the others have maintained a condition of vigorous health. Last May, M. Nélaton saw several patients upon whom I had operated in 1859, 1860, and 1861. He examined them very carefully, and was very deeply impressed by the perfect health they enjoyed. Menstruation has returned in many cases with perfect regularity, and one patient bore a healthy child afterwards. As many of these women, now young and healthy, who are fulfilling their various duties in domestic service, or in the home life of single ladies, or as wives and mothers, and who are likely to continue to do so for many years, would in all probability have died a miserable death, months or years ago, had not their lives been saved by ovariotomy—it is for the Fellows of this Society to determine whether an operation which has led to such results is still to be stigmatised as unjustifiable—whether they who perform it are necessarily open to the reproach that they do so rather for their own selfish purposes than for the good of their patients—whether they who, in the face of evidence sufficient to convince any unprejudiced mind, continue to withhold from their patients a tried and approved means of curing a disease otherwise incurable and certainly fatal, are not open to a still more serious reproach—whether it does not become us (as men of science who practise our art, not for our own advantage only, but with the earnest desire to do the very best that can be done for those who are confided to our care, or who trust in our knowledge, our skill, and our honour) no longer to oppose or condemn this operation, but rather to study its past history—to regard it with pride, as an offspring of British genius, cultivated by British industry—and to aid its future progress by perfecting our means of diagnosis; by ascertaining the conditions which should in any case encourage us to recommend the operation, or should deter us from doing so; and by investigating the avoidable or removable causes of excessive mortality, reduce it to that comparatively low proportion to which I feel confident it may be and will be reduced, and thus render ovariotomy in each coming year more honourable to British Surgery, and more useful to Mankind."

A Case of Double Ovariectomy, in which the Patient was saved by Daily Injections into the Peritoneal Cavity for Eight Weeks.

By Dr. E. R. PEASLEE, Professor of Anatomy, &c.

(*American Quarterly Journal of Medical Science*, April, 1863.)

This is an important case on two accounts. It is important for its rarity, for instances of double ovariectomy with a successful result are quite exceptional: it is still more important as showing what may be expected from the use of large injections into the peritoneal cavity.

This is the second case of successful double ovariectomy which has occurred in Dr. Peaslee's practice. The first happened twelve years ago. The patient was 24 years of age, and unmarried. About a year after the operation she married, and ever since that time she has had uniform good health, not even suffering from headaches, and capable, Dr. Peaslee says, "of fulfilling all the functions attributable to her sex," with the necessary exception of menstruation and conception. Dr. Peaslee also states expressly, that no change has taken place in her external physical conformation or mental characteristics; and that now, at 36 years of age, she is a splendidly developed woman.

Dr. Peaslee employed large injections into the peritoneal cavity about seven years ago, in a case of ovariectomy, and with very satisfactory results. In that case he used them for only *seven* days: in the present case, he used them for *fifty-nine* days in succession, often three times in the course of the twenty-four hours.

CASE.—Aug. 30th, 1862, Mrs. E. L. S.—, of Port-Mills, Vermont, ætat. 35, a highly-educated lady, of delicate constitution, married eleven years, but never pregnant. A year after marriage she had inflammation of the left ovary. The history of the progress of the case, and of the operation, is given by Dr. Peaslee, but is of no special interest: moreover, everything went on in a satisfactory manner until the nineteenth day. On this day a change took place in the symptoms, and the injections were resorted to; and now it becomes necessary to state details:—

"19th day.—Was called to see her at 1 A.M., because 'she seemed stupid, and it was difficult to arouse her.' Quiniae gr. ss., brandy 5ij. Although the bowels had been freely moved by hydrarg. cum creta and rheum, and injections yesterday, the dizziness and headache increased. The tongue was red, and becoming more and more dry. Feeling sure that these symptoms were due to the presence of decomposing fluid in the peritoneal cavity, I decided to wash out that cavity. Accordingly, at 10 P.M., I passed an elastic bougie (No. 5) into it by the side of the five ligatures; applied to the tube a syringe, and injected a quart of the artificial serum before described, at a temperature of 98° (Fahren.), and then changing the position of the patient, and depressing the outer end of the bougie so as to bring it to a lower level than the other extremity in the peritoneal cavity—thus rendering the tube a syphon—about three pints of very fetid fluid were discharged in the course of an hour.

"As it was found necessary to repeat this operation from one to three times daily for the next fifty-eight days, and, as this was the important and peculiar feature of the case, I will give the results in as brief a form as possible, omitting the minor details of the patient's progress.

" 20th day.—Injected two quarts of the solution, and it ran out turbid and fetid, but not quite as much so as yesterday. Pulse 106; tongue better; appetite good. Liqr. sodæ chlorinatæ gtt. v, quâque sextâ horâ sumendæ. 8 P.M.—Injected Oij of the solution, and left it to run out through the syphon.

" 21st day.—Syphon has discharged during the night Ojj of thick, creamy-looking, very fetid fluid. She feels better. Pulse 100; less thirst than for several days; appetite good. 7 P.M.—Oij injected, and left to run out.

" 22nd day, 10 A.M.—Slept well last night. Has been passing limpid urine freely every few hours. Bowels moved once naturally. Washed out the peritoneal cavity four times—injecting Oj each time—and drawing it out with the syringe. The fluid ran out quite clear the last time. 7 P.M.—Ojss of the solution injected at once and left to flow out. It had very little odour, but the operation was repeated in the evening.

" 23rd day, 10 A.M.—Pulse 110, and good. Two semi-fluid evacuations from the bowels since last report. Tinct. opii camph. 5j. Appetite good. While introducing the tube a fetid gas escaped through it. Injected as usual, but the fluid that came away was not very fetid. Pulse, after injection, 104. 8 P.M.—Before injecting, applied the syringe to the tube, and drew off Oj of somewhat fetid fluid; then injected Ojss, and left to flow out through the syphon. Pulse, before injecting, 110; afterwards, 104. Best day yet.

" (The bowels were moved naturally once a day after this date.)

" 24th day, 10 A.M.—Drew off Oss of thick, creamy-looking fluid, by suction with the syringe. Then injected as before. 8 P.M.—Drew off 5iv, very nearly, of thick fluid—not fetid, but quite offensive. Then injected as before.

" 25th day, A.M.—The fluid drawn off by the syphon last night was quite transparent. Injected Ojss, and, on raising her up in bed, a somewhat thicker fluid came away. Tinct. opii camph. 5j. 8 P.M.—She was fatigued by the prolonged operation of the morning, but is better now. Fluid comes away clearer after the injection.

" 26th day, A.M.—Pulse 100, good; tongue ditto. Syphon fluid clearer during the night. 5ij drawn by suction—offensive, but thinner. No gas escapes around the tube. One ligature, the highest on the pedicle of the left side, removed.

" 27th day.—About 5iv of the thick fluid by suction; but 5ij of the solution was injected and left in last night. Hitherto the tube had been removed each time after being used, but as the opening through the abdominal wall was getting smaller, and as the introduction of the tube was beginning to cause considerable pain, it was now allowed to remain in, and was seldom afterward removed during the entire period of her convalescence. Being satisfied also that the albumen in the solution underwent decomposition on commixture with the fetid fluid in the peritoneal cavity, I henceforth used the following solution:—R. Liqr. sodæ chlorinatæ f5j, sodii chloridi 5j, aquæ Oj. M.—instead of the one before mentioned; and I had reason to be perfectly satisfied with the change.

" 28th day.—Fluid drawn out clearer and odourless. Says she has noticed, during the last two or three days, an escape of air from the vagina in puffs, and also a whitish discharge, about one drachm, three times a day, for about one week. I feared the fetid accumulation in the abdomen had caused ulceration through the vaginal wall, but, on examination, found this was not the fact.

" 29th day, A.M.—Passed a good night. 5ij of odourless but thick fluid by suction. P.M.—5j by suction. Injected fluid ran off clear.

" 30th day.—Pulse about the same, 104. The tube causes some irritation, and about $\frac{5}{j}$ of healthy pus has been discharged around it. $\frac{5}{ij}$ of the creamy fluid by suction, but there is no offensive odour. Other ligatures not loose yet.

" At this time I returned to New York, leaving Mrs. S. under the care of Prof. Albert Smith, of the N. H. Medical Institution, and to him and to the husband of the patient I am indebted for the remainder of this report. I advised them to continue the injections daily, once or twice according to the character and the quantity of the fluid removed, and as long as it continued to be fetid. This was done; the patient always feeling an immediate benefit from each washing out, and relapsing into a languid state if the operation was omitted or too long deferred.

" Sept. 30, A.M.—Pulse 100; $\frac{3}{j}$ of the peculiar fluid by suction, and in the evening a like amount. Sat up in bed to eat, for the first time.

" Oct. 6.—The amount of fluid in the abdomen has been slowly decreasing; only $\frac{5}{jss}$ has accumulated in twenty-four hours.

" 16th.—The abdominal walls have contracted to such an extent that only $\frac{5}{ij}$ of the dilute solution of chlorinated soda can be conveniently injected and retained. Since the 6th inst. the experiment has been tried of drawing out all the matter and omitting the injection; but the fetor increased to such an extent that the solution of soda was resorted to again. Sat up to-day in a chair half an hour. Pulse 100. Appetite good. Bowels constipated for several days; moved by enema. Pil. rhei comp. iij produced no effect.

" 27th. Sits up an hour or two at a time, and walks across the room once or twice. Only $\frac{5}{j}$ of thick fluid removed by suction. Pulse 98.

" 28th. 59th day.—She was placed on a mattress in a covered carriage to-day, and carried to her home, twelve miles distant. The journey caused some fatigue, but otherwise no inconvenience.

" Nov. 6th.—Remaining four ligatures were removed. Mr. Smith remarks in a letter: 'I think they are held by the knot on the inner side of the abdomen, as pulling has caused no pain for a week past.'

" From this time onward she gained gradually in strength, her convalescence being interrupted only by a severe attack of constipation and colic, which caused no little apprehension, but she was very skilfully treated by Dr. Worcester (before mentioned), and finally relieved. Less and less matter was drawn from the peritoneal cavity until Nov. 14th, when none whatever could be obtained.

" On the 16th of November, seventy-eight days after the operation, her husband writes: 'With the consent of Dr. Worcester, I have this morning removed the tube and closed up the opening.' The injections had thus been used for fifty-nine days in succession, or from the nineteenth to the seventy-eighth day after the operation.

" Jan. 1st, 1863.—Mrs. S. wrote me to present the compliments of the season, and said she had as few aches and pains as the majority of people have; and up to the 13th of March I hear of her continuing in good health."

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